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NORTHERN NIGERIA.

ANNUAL MEDICAL REPORT

FOR YEAR ENDING

31st DECEMBER, 1913.

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No. 490/14.

NORTHERN PROVINCES, NIGERIA.

Principal Medical Office,
Zungeru,
17*th March*, 1914.

Sir,

I have the honour to submit, for the information of His Excellency the Governor-General, and for transmission to the Right Honourable the Secretary of State, the Medical Report on the Health and Sanitary condition of Northern Nigeria for the year 1913, together with the Returns, etc., appended thereto.

I have the honour to be, Sir,

Your obedient servant,

F. MANNING,
Principal Medical Officer.

The Secretary,
Northern Provinces,
Zungeru.

NORTHERN NIGERIA.

ANNUAL MEDICAL REPORT, 1913.

ADMINISTRATIVE.

STAFF.

The principal changes were as follows :—

Promotions.—Dr. F. Manning, Deputy, was promoted Principal Medical Officer on the 8th October, 1912, vice Dr. J. P. Fagan to pension.

Transfers.—Dr. K. McGahey, Medical Officer, to the Government of Ceylon on promotion as Senior Sanitary Officer from 16th October, 1913. Dr. J. W. Scott Macfie to the Medical Research Institute, Lagos, from 21st March, 1913.

Resignation.—Dr. W. Morrison, on 13th July, 1913.

Invalidings.—Drs. C. T. Costello and M. W. Manuk.

Appointments as Medical Officers.—J. C. C. Hogan, J. A. Beattie, J. M. Benson, C. J. H. Pearson, B. W. F. Wood, W. E. S. Digby and J. W. B. Hannington. Mr. W. C. Hughes was appointed Chief Dispenser and Storekeeper, vice Mr. G. C. W. King.

Secondings.—The following officers of the West African Medical Staff were seconded for duty with the Yellow Fever Commission :—

Dr. J. M. Dalziel, Dr. W. B. Johnson.

Dr. J. E. L. Johnston was employed at the Medical Research Institute, Yaba, Lagos.

The stations Offa and Jebba, previously under the medical charge of Southern Nigeria, were taken over from 1st January, 1913.

FINANCIAL.

With a steadily increasing population of Europeans and other non-natives, and the growing confidence of the natives themselves in the efficacy of proper medical treatment, the expenditure of the Department must necessarily become greater.

The following is a comparative table for the past six years :—

EXPENDITURE.

1908	£29,780
1909	30,080
1910	34,942
1911	34,577
1912	37,128
1913	40,702

The Revenue derived for the year 1913 was as follows :—

By Hospital Fees	£622	19	10
,, Sale of medical comforts ...	104	18	10
,, Sale of drugs, &c.	127	17	9

Detailed expenditure for the year is given in Table II.

PUBLIC HEALTH.

In comparison with former years the health of Europeans must generally be regarded as fairly satisfactory.

I append the usual tables of analysis.

EUROPEANS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Average population...	322	342	347	424	499	544	637	641	703	804
Number of deaths ...	13	10	17	7	10	13	13	13	22	13
Death rate per 1,000	40·37	20·23	48·00	16·50	20·04	23·80	20·41	20·28	31·29	16·0
Number of invalids ..	67	40	55	50	48	67	48	40	50	70
Invaliding rate per 1,000	208·01	116·96	158·50	117·92	96·19	123·16	75·35	62·40	71·12	87·06

Six of the above deaths were due to Blackwater Fever; in addition to the subjoined comparative table, I attach a Chart (A) showing the yearly incidence of cases and deaths in relation to the cases of Malaria.

BLACKWATER FEVER.

	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	Average.
Number of cases ...	17	35	18	25	12	14	13	9	12	14	17	17
Number of deaths	8	6	4	5	0	4	3	2	6	4	6	4
Rate per 1,000 of average European population	54·00	108·69	52·63	72·04	28·32	22·05	23·89	14·18	18·72	19·90	21·14	39·59
Case mortality per cent.	47·05	17·14	22·20	20·00	—	28·57	23·07	22·20	50·00	28·57	35·29	26·73

A full report on the cases of Blackwater Fever has already been submitted, in which it was stated that the total number of cases was 17, of which number two cases had not been included in any returns of sick. Tables VI. and VII. show, however, 17 admissions for this disease owing to two patients in the acute stage being treated in their own station and subsequently transferred to hospitals, causing entries in each of the two tables.

The Nosological Tables show a total of nine deaths only, the discrepancy being accounted for by the fact that four fatalities were unattended by Government Medical Officers, and did not appear in any return of sick.

With regard to invalids, the causes of invaliding were, as in former years, mainly attributable to climatic or other local conditions. In addition to the number shown as invalided, I gather from a reliable source, that some 40 other non-officials were invalided to Europe for change of climate, but as no record is at hand as to the actual numbers, or the disabilities from which they suffered, they are not included in my statistics.

EUROPEAN OFFICIALS.

	1912.	1913.
Average number resident	325	326
Total number on sick list	819	532
Total number of days on sick list	6,049	4,487
Average daily number on sick list	16·5	12·10
Percentage of sick to average number resident...	252	163·22
Average number of days on sick list to each patient	7·39	8·43
Average sick time to each resident	18·6	13·73
Total number invalided	25	50
Percentage of invalidings to average number resident...	7·69	15·34
Total deaths	6	4
Percentage of deaths to average number resident	1·84	1·22

In addition to the above, two invalided officials died in England.

The above figures include all officials serving within the confines of Northern Nigeria, irrespective of Department, and are indicative of improved general health. Of the 50 invalids, 24 were railway officials, and of them 20 were second class officers. The percentage of invalids to the average number of railway officials resident was exceptionally high.

NATIVE OFFICIALS.

	1912.	1913.
Average number resident	621	634
Total number on sick list	574	273
Total number of days on sick list	3,265	2,054
Percentage of sick to average number resident	92·43	43·06
Average number of days on sick list for each patient	5·68	7·52
Average sick time to each resident	5·25	3·24
Total number of invalids	4	3
Percentage of invaliding to average number resident	·64	·47
Total deaths	2	3
Percentage of deaths to average number resident	·32	·47
Average daily number on sick list	8·92	5·65

The health of this class of official was good generally. The decrease in the number of sick is marked. This, however, may partly be attributed to the fact that in the figures for 1912 were included sick who were not in reality "native officials," owing to a definite designation of this class of official not being clearly understood.

GENERAL EUROPEAN POPULATION.

The European population of the Protectorate, as far as can be computed with any degree of accuracy, was as under :—

	1912.	1913.
Government Officials	325	326
Trading Firms	93	156
Mining Companies	250	286
Missions	35	36
Total ...	703	804

GENERAL NATIVE POPULATION.

The official figures remain as last year, approximately 9½ millions. No reliable statistics of births and deaths are obtainable.

The following information, extracted from an Assessment Report by a Political Officer in the Sokoto Province, may, however, prove of interest:—

> "The figures given are for only one year, and are for only a small unit "of population (20,000), and consequently they cannot be taken as standard "values. They may be much above or much below the average. I asked "if there had been any noticeably large or small numbers of deaths among "the babies, and was told that, as far as they were aware, they were much "as usual; at any rate there had been no epidemic among them."

Boys born during the last 12 months	704
,, ,, ,, ,, who have died ...	148
Percentage of deaths	21·02
Girls born during the last 12 months	616
,, ,, ,, ,, who have died ...	118
Percentage of deaths	19·16
Total number of births	1,320
Total infantile mortality	266
Percentage ,, ,, ...	20·15

Total population included, 10,615 females, 9,829 males.

SANITATION.

The work of the Senior Sanitary Officer and his Junior was during the year 1913 mainly devoted to the choice and laying out of the many sites for the permanent stations in various districts of the Protectorate, and the full report of the Senior Sanitary Officer, which is attached, describes their activities.

The pipe-borne water supply at Lokoja, from springs on Mount Patti, has proved a great benefit, and the system locally is being gradually increased.

At Minna the water supply practically failed in the month of April, and necessary supplies had to be brought in by special water train from the River Bako, some 10 miles distant; arrangements are, it is reported, now in hand for a permanent pipe-borne supply from the same source.

As opportunity admits, tours are periodically made by Medical Officers through their districts, and such recommendations as they make through the Political Officers are generally sympathetically received by the Native Headmen and Chiefs, with the result that the sanitation of towns and villages shows gradual improvement.

Owing to the occurrence of cases of Yellow Fever in Southern Nigeria, Segregation Camps for suspects were erected at Lokoja and Jebba, the two gateways of the Protectorate from the South. River steamers and passenger trains were carefully inspected, and every provision was made for dealing with any imported case of the disease, or with suspected persons.

Considerable attention has been given to the subject of the prevalence among the native community of infection by parasite worms, and special reports have already been submitted; it is hoped that in time the measures taken will show a diminished incidence of affections attributable to such infection.

During the year the Sleeping Sickness Isolation Camp at Zaria was closed. Examination of the three remaining cases for Trypanosomes having repeatedly proved negative, the patients were sent to their homes.

The Camp, however, was still available for any duly recognised cases which might locally occur. The Nosological Tables show 8 admissions, with 4 deaths due to sleeping sickness. The Senior Sanitary Officer, in his report for the year 1912, explains our present position with regard to this disease. Several investigations of reported local epidemics have been carried out, but in the majority of instances the results were negative. In the few cases where the diagnosis was confirmed the patients were segregated under local arrangements.

METEOROLOGY.

The year 1913 is remarkable for the general shortage of rainfall. At only two stations in the Protectorate did the amount registered come up to the average for previous years, and in three instances the deficiency was upwards of 15 inches.

Reference to the Medical Report of the Protectorate for the year 1912 will show that mention was there made of the fact that the rainfall was small, and that in many parts of the North the inhabitants narrowly escaped famine ; a second successive failure gives rise to alarming misgivings for the immediate future, which a plentiful downfall in 1914 can alone dispel.

Appended is a comparative table showing the amount of rain registered at various stations where observations are kept, in so far as is possible. It will be observed that one station (Womba, Nassarawa Province) registered an abnormally high amount of rain, whilst in every other instance the amount for 1913 was below the average. At Geidam and Maiduguri the figures give cause for considerable alarm.

The former station, situate on the borders of the desert, has for the past five years registered a steadily decreasing rainfall, and the question of the re-afforestation of the district has, I understand, been proposed as a remedy.

Table showing rainfall in inches.

	YEAR.									AVERAGE TO 1912.	RAINFALL 1913.
	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.		
Zungeru	51·10	41·31	60·39	37·16	48·78	58·89	53·44	42·90	29·93	42·39	35·17
Lokoja	41·72	49·64	51·83	36·68	44·12	65·14	45·59	41·57	46·74	47·00	34·76
Kano	...	36·69	38·12	27·55	34·86	49·03	26·81	40·00	29·20	35·28	19·05
Zaria	...	51·27	61·05	29·80	45·48	55·88	53·80	43·35	43·13	48·10	33·01
Yola	33·77	42·76	34·60	27·55	53·77	44·26	38·67	42·22	38·93	39·61	29·93
Sokoto	32·14	33·32	...	19·86	20·44	29·72	23·11	28·70	19·16	25·80	16·38
Ilorin	...	47·02	49·00	54·74	55·46	65·18	51·14	52·58	38·85	50·52	43·83
Amar and Ibi ...	...	...	23·49	...	...	53·30	49·63	36·38	46·10	41·78	43·42
Geidam	...	...	...	...	22·39	21·28	16·87	10·46	12·59	16·71	5·76
Maifoni & Maiduguri	...	...	...	...	23·30	31·89	19·53	30·00	18·38	30·62	13·98
Kontagora ...	...	46·28	58·40	37·28	51·15	60·67	53·01	54·09	32·83	49·21	36·27
Bassa and Ankpa ...	...	...	...	...	58·77	66·85	56·44	...	47·81	54·97	49·78
Nafada	...	...	...	...	...	37·27	33·24	30·32	22·01	30·93	16·58
Birnin-Kebbi ...	...	...	...	...	...	27·70	25·10	30·69	20·32	25·95	23·37
Katagum	...	...	...	...	23·70	23·03	18·21	19·96	20·50	21·08	13·81
Bauchi	...	...	42·24	...	47·88	43·23	38·86	48·79	35·83	42·80	33·89
Baro	...	...	...	...	46·46	55·77	47·98	46·14	43·51	47·97	39.50
Naraguta	...	...	...	...	...	...	...	57·84	47·33	52·58	51·37
Dumjeri, Keffi, and Womba	...	...	...	19·11	...	49·02	44·40	40·45	35·95	37·78	58·94

Other figures of interest are as follows :—

	Reading.	Date.	Station.
Highest shade temperature	116	April	Geidam
Lowest shade temperature	43	December	Nafada
Highest mean temperature	84·2	,,	Baro
Lowest mean temperature	71·9	,,	Naraguta
Maximum total rainfall	58·94	,,	Womba
Minimum total rainfall	5·76	,,	Geidam
Maximum rainfall on one day	3·64	18th August	Ilorin
Greatest range of temperature	60	March	Nafada
Highest mean relative humidity ...	72	,,	Ankpa
Lowest mean relative humidity	37	,,	Geidam

HOSPITALS AND DISPENSARIES.

European Hospitals.

As foreshadowed in the Report for 1912, a temporary European hospital was opened early in September at Kaduna.

This was rendered possible by the appropriation of two buildings intended for the accommodation of Railway staff. The hospital itself consists of a four-room bungalow, three rooms of which are used as wards, whilst the fourth is necessary for the Medical Officer and the nurses on duty. The usual offices and outhouses have been added, and the accommodation is satisfactory. A second building, quite close to the hospital, has been assigned as quarters for Nurses, of whom three are in residence. This temporary hospital has proved a necessary and much appreciated institution for the reception of sick from Kano, Zaria and other stations whence, prior to its opening, patients whose complaints have become subacute or chronic had to bear the longer journey to Zungeru. A photograph of the building is attached, together with a ground plan.

Notwithstanding the above increase in hospital accommodation, the admissions to Zungeru Hospital were in excess of the numbers for 1912. The building at Zungeru is ill adapted to modern requirements; but having regard to the early move of headquarters, any question as to its future must for the present remain in abeyance. As far as can be foreseen, however, it will, I consider, prove necessary to provide hospital accommodation of a permanent nature situated centrally between the future capital and Ibadan.

The advisability of establishing small, well-equipped European hospitals in other stations (*e.g.* Naraguta and Kano) will probably have to be considered in the near future.

At Lokoja, as would be expected, the admissions have decreased in number, but Lokoja is the base of a large commercial as well as official European community, and although the station has of late years gradually lost some of its former importance, the necessity for hospital accommodation has by no means decreased; and in view of the commencement of railway construction activity in the immediate neighbourhood, such necessity bids fair to become more than ever paramount.

During the year the three above-mentioned hospitals have been conducted in a highly efficient manner, and their administration leaves nothing to be desired.

Table VI. gives a detail of the cases treated therein, whilst the added summary affords particulars of the numbers in each.

Native Hospitals.

Recognising the necessity of permanent hospital accommodation for African natives, buildings have been erected or are in course of erection at Zaria and Kano, and in many other stations permanent buildings will. it is anticipated, be provided in the near future. In nearly every medical station, however, mud buildings with beaten floors (in some instances concrete) are in use for the accommodation of intern patients. Hitherto only the three permanent native hospitals have been counted as such for statistical purposes; in this year's return the intern sick from the following stations have been included in Table VI:—Zungeru, Lokoja, Baro, Zaria, Kano, Ilorin, Jebba, Minna, Kaduna, Naraguta, Bauchi, Ibi, Yola, Abinsi, Maiduguri, Katagum, Sokoto.

Figures from the three first-named stations, as heretofore, are applicable to the whole period of 12 months, whilst from the remaining stations the figures given are in respect of the period 1st July to 31st December, 1913.

In three stations there are dispensaries where natives receive treatment, other than the station or Government institutions. Such dispensaries, as has been previously reported, are maintained, under the supervision of the Medical Officer of the district, by the native treasuries.

The Adminstration have decided to extend the provision of similar institutions in many of the larger native cities, and a trial is at once to be made of a combined hospital and dispensary in the City of Kano. For the time being, however, the medical department will administer it until a supply of educated Mohammedan natives can be obtained from the local schools to act as dispensers and ward-masters, and until such time as its success shall have been assured.

Accommodation for the sick has been largely increased in the Zungeru Prison, and the health of prisoners in all provincial goals is being carefully watched.

I append a brief commentary (where it appears called for) on the diseases treated during the year:—

EUROPEAN PATIENTS.

Comparative Table showing admissions (all diseases) by months for the past five years.

Month.	1909	1910	1911	1912	1913
January	130	68	68	80	123
February	116	66	79	84	132
March	109	89	75	80	120
April	125	61	69	84	100
May	125	70	60	92	126
June	131	79	64	108	147
July	85	84	66	114	132
August	136	90	77	84	130
September	117	105	69	124	122
October	101	115	83	114	136
November	110	74	99	115	146
December	100	127	103	104	121
Total	1,385	1,028	912	1,183	1,535

MALARIA.

To the average man the necessity for his taking anti-malarial precautions is, I consider, patent, and such precautions are becoming more and more practised by the European community.

In cantonments and other stations the Medical Officer of Health pays monthly, or more frequent, visits of inspection to every part of the area under his care, and a rigorous campaign of extermination of mosquitoes is continually being carried out.

During the past year 118 convictions were obtained in the various courts for offences in contravention of the sanitary regulations.

DYSENTERY.

The figures show four cases in excess of last year.

VENEREAL DISEASES.

For certain reasons I considered it desirable, in the early part of the year, to call the attention of Medical Officers to the necessity of reporting, confidentially, cases of this nature occurring among Europeans (whether Government officials or others), and that patients themselves should be led to understand that the confidential nature of any such reports would be strictly respected. I adopted this method with a view to minimising, if possible, instances of concealment of these diseases. To this may be assigned the difference in the figures shown in the accompanying tables as compared with previous returns. For obvious reasons I do not use the term "increase" over previous years. Nor do I think there is an increased incidence among Europeans in the Northern Provinces; but I certainly consider that the above arrangement, whilst affording statistics of perhaps greater value, tends to more satisfactory results as regards treatment.

DISEASES OF THE NERVOUS SYSTEM.

Diseases of the nervous system accounted for 62 admissions to either hospital or to out-patient treatment, invaliding being necessary in eight cases. The fact that, during the year 1912, six persons were sent home as invalids owing to similar causes was commented upon in the last report.

DISEASES OF THE DIGESTIVE SYSTEM.

Diseases of the digestive system were, as heretofore, the cause of the majority of admissions.

The total number who presented themselves for treatment at the hands of Government Medical Officers was 1,535, being an increase of 352 over the figures for the year 1912.

Speaking generally, the ailments enumerated in the accompanying tables. affecting Europeans, call for little comment.

NATIVE PATIENTS.

SMALLPOX.

Patients to the number of 386 came under treatment for this disease during the year, with a mortality percentage of 18. These figures do not, as would appear at sight, indicate a severe isolated epidemic, or any appreciably increased incidence, they are more the result of a closer investigation by district Medical Officers than has heretofore proved practicable. I can only repeat previously expressed opinions that the disease is endemic to a widespread extent throughout the country, but I am enabled to report that, under present circumstances, satisfactory progress towards protection of the natives by vaccination is maintained.

In practically every district of the Protectorate the Medical Officers in charge have been called upon to investigate epidemics, and have performed whatever vaccinations time or circumstances would permit, and in many instances Political Officers have rendered valuable aid; but much remains to be accomplished, and the appointment of native vaccinators is now under serious consideration. Under the peculiar conditions which obtain in Northern Nigeria the selection of suitable men to fill the posts of native vaccinators is a matter of difficulty. In the Northern Provinces it would be useless to employ educated coast natives for this work, as the better class Mohammedan will not associate with them, nor have alien Africans any influence in a pagan community in the Northern Provinces.

Another point is the question of adequately supervising native vaccinators of any class, the distance between the medical stations in the Northern Provinces being so much greater than in the Southern Provinces. An experiment is at present under consideration for training a few young Mohammedans at one of the provincial centres, and the results will be reported on by the Medical Officers in due course.

Ability to read and write is furthermore an almost indispensable qualification for such men, and the number of natives so qualified is as yet practically nil.

I append a return of vaccinations performed during the past year.

Station.	Number vaccinated.	Number successful.	Number failed.
Zungeru	559	521	38
Lokoja	988	801	187
Kano	1,824	1,636	188
Kontagora	216	187	29
Ilorin	166	122	44
Kaduna	157	134	23
Zaria	754	657	97
Baro	105	61	44
Yola	362	357	5
Birnin-Kebbi	1,801	1,725	76
Ibi	112	79	33
Minna	250	104	146
Bauchi	867	719	148
Naraguta	414	325	89
Womba	351	263	88
Nafada	43	38	5
Maiduguri	498	421	77
Sokoto	176	136	40
Geidam	274	176	98
Katagum	1,349	1,166	183
Ankpa	1,904	1,691	213
Abinsi	102	39	63
Jebba	318	269	49
Offa	33	2	31
Kabba	22	20	2
Katsena	262	149	113
Rahama and Jengre	9	3	6
TOTALS	13,916	11,801	2,115
Percentage of successful cases ...	—	84·8	15·2

Dried lymph supplied by the Lister Institute was used.

The following extract from a report by the Medical Officer stationed in the Sokoto Province, dealing with outbreaks in the Gando and Argungu Districts, is, I consider, of interest :—

> " *Incidence.*—Enquiries have been made as to the number of cases of " smallpox during the years 1911, 1912 and 1913, occurring in 56 towns " and villages, 53 being in the Gando Division, and three in the Argungu " Division ; the figures given, therefore, refer to a period of three years, " and, to simplify the report, instead of giving the figures of each town " separately, I have grouped adjacent towns together, and referred to any " special features in connection with any one town subsequently.

Name of Towns or Districts.	Total Population.	Number of cases of Smallpox.	Number of Deaths.	Mortality Percentage.	Deaths from Smallpox per 1,000 of Population.
Aliero District, containing 31 towns, with population varying from 6,249 upwards	11,892	444	130	29·2	10·9
Gando, Gulumbi, Kwambaza and Tari	9,928	115	23	20·	2·3
Argungu, Gulma, Augi	10,000	421	90	21·3	9·
Zagga, Giru, Bakwoi, Gwaj-di, Bunzu	8,545	542	189	35·8	22·1
Jegga	9,276	360	80	22·2	8·6
Birnin-Kebbi	8,223	80	20	25·	2·4
Godongagi, Zauro, Ambrusa ...	9,888	142	17	11·9	1·7

“ These figures cannot be taken as an exact or true estimate of either “ the extent of the disease or the death rate from it, no record having “ been kept in any of the towns of either the one or the other. They “ serve, however, I think, to give some indication of the widespread “ nature of the epidemic, and the great mortality from it; further, when “ one considers :—

“ (*a*) that there is considerable difficulty in finding an adult “ person over 20 years of age who has not had smallpox, and

“ (*b*) That native headmen and others, fearing to be worried “ about isolation and vaccination, etc., tend to minimise the amount “ of the epidemic or to suppress it entirely,

“ these figures, at any rate as regards the incidence of the disease, might “ in my opinion be quite safely multiplied by two or sometimes by three “ or four.

“ As regards the mortality percentage, this will be noticed to be “ extremely high, as compared with the usual mortality in European “ epidemics, the lowest working out at 20 per cent., as compared with “ 5 to 10 per cent. in Europe.

“ This would appear to support the statement generally made that “ smallpox is more severe in the black races, and is also doubtless “ due to the absence of any rational treatment—possibly, also, headmen “ and others responsible for the information are more likely to re- “ member the number of deaths which occurred in an epidemic than the “ number of cases of illness, in which case the number of deaths would “ give a higher percentage than should actually be the case.

“ There is no reason to believe that the heavy mortality is due to “ the type of the disease—amongst the numerous cases I saw during “ last May and June only three were of the confluent type and there “ were none of the hæmorrhagic type.

“ In one of the villages—Kardi—there were four cases of lobar “ pneumonia, complicating smallpox, in a total of 12 cases; one of those “ died, and judging by native rumour it is not unlikely that this is a “ fairly common complication of the disease, and occurs occasionally in “ an epidemic form.

“ Apart from the mortality, there is no doubt that the complications “ of the disease, and their neglect or mismanagement, are a most fruitful “ source of permanent disablement; it is the most prevalent cause of “ blindness in the Province; Otitis is also a very common complication, “ and I saw two cases of Arthritis, one of them purulent, during the “ recent epidemic; the eye complications are, however, by far the most “ common. Keratitis, Corneal Ulcer, and occasionally Panophtalmitis “ often follow the neglected inflammation of the conjunctivæ, and result “ in partial or complete loss of sight in one or both eyes.”

Upwards of 1,801 vaccinations were performed in the district during the year, with 96 per cent. successful results.

LEPROSY.

There were 243 admissions to the Leper Camps established in the far Northern districts. The system of segregation cannot be regarded as good, but it is as yet the only possible method of dealing with such cases. The Medical Officers of the districts where the disease is prevalent report that numerous cases of Leprosy are to be seen at large, mixing with their fellows and pursuing their ordinary occupations.

ENTERIC FEVER.

Notwithstanding an increased number of admissions the figures returned give rise to no alarm. The disease, save in one instance, was generally of a mild type.

VENEREAL DISEASES.

To judge from statistics this class of affection is increasing, but, as in the case of smallpox, figures are misleading. That this nature of disease is widespread we recognise, but I do not consider it possible to offer an opinion as to its decrease or otherwise; nor can any perceptible change be reported with accuracy for a considerable time yet to come.

It is satisfactory to know that the subject of venereal disease is receiving every attention in the Provinces, and that natives, outside those in Government employ, receive the most careful treatment when presenting themselves at the hospitals or dispensaries.

Although both Medical and Political Officers are continually urging upon the various chiefs the common rudimentary measures for preventing the spread of this disease, progress on a large scale can scarcely be hoped for under existing laws, which do not admit of compulsory notification with forcible isolation.

SCIENTIFIC.

The work of the local investigators under the Yellow Fever Commission was aided whenever opportunity arose by forwarding them all obtainable data demanded.

The special courses of Entomology which are now offered to Medical Officers have resulted in an increased interest in this important subject, and specimens are being frequently submitted for identification.

Time and opportunity have hitherto allowed of but little laboratory work, an addition to the equipment for that purpose at the two headquarter stations is being gradually made, whilst at Lokoja a permanent building for research work is contemplated.

Microscopes with the necessary accessories are supplied to all medical stations.

Entomological outfits are stocked ready for issue to officers who have taken the prescribed courses, or to those who are desirous of collecting specimens for identification.

(Signed) F. MANNING,

Principal Medical Officer.

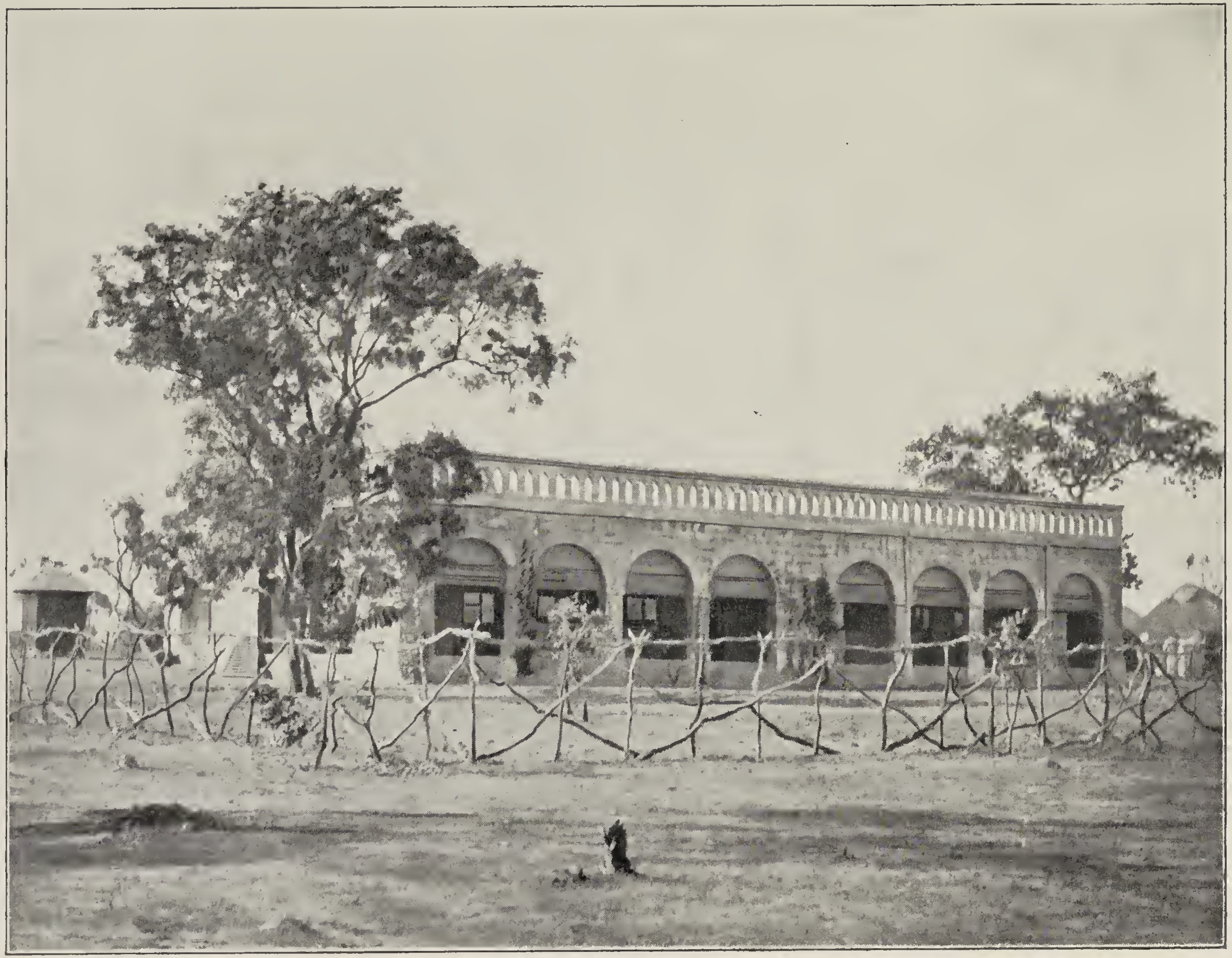
ZUNGERU,

17th March, 1914.

Table I.

The following is a complete list of the staff employed :—

Office.	Name.	Remarks.
Principal Medical Officer	Manning, F.	
Deputy Principal Medical Officer	vacant.	
Senior Sanitary Officer	Blair, M. Cameron	
Senior Medical Officer	Watson, C. E. S.	Transferred from Gold Coast.
,, ,, ,,	Watson, C. F.	
,, ,, ,,	Gordon-Hall, W. H. A.	
,, ,, ,,	Taylor, W. I.	
Junior Sanitary Officer	Foy, H. A.	
Medical Officer	Chesnaye, F. W.	
,, ,,	Lobb, H. P.	
,, ,,	Adams, E. C.	
,, ,,	Manuk, M. W.	Invalided to pension, 19th Oct.
,, ,,	Twomey, G. R.	
,, ,,	Parsons, A. C.	
,, ,,	Ellis, M. F.	
,, ,,	Costello, C. T.	Invalided to pension, 23rd Aug.
,, ,,	McKinney, H. G.	
,, ,,	McGahey, K.	To Ceylon, 15th Oct.
,, ,,	Norman, G. B.	
,, ,,	Dalziel, J. M.	Seconded with Yellow Fever Commission, 3rd September.
,, ,,	Williams, R. F.	
,, ,,	Inness, W. D.	
,, ,,	Swann, A. J. T.	
,, ,,	Pirie, G. J.	
,, ,,	Moiser, B.	
,, ,,	McLeay, C. W.	
,, ,,	Pollard, J. M. W.	
,, ,,	Trumper, W. A.	
,, ,,	Bissell, F. E.	
,, ,,	McCay, F. W.	
,, ,,	Porteous, E. J.	
,, ,,	Lindsay, J.	
,, ,,	Macfie, J. W. S.	Transferred to Medical Research Institute, 26th Mar.
,, ,,	Morrison, W.	Resigned 13th July.
,, ,,	Jeffreys, H. C.	
,, ,,	Crichton, A. J. M.	
,, ,,	Davies, L. W.	
,, ,,	Courtney, B. J.	
,, ,,	Willan, R.	
,, ,,	Thomson, J. W.	
,, ,,	Percival, B. A.	
,, ,,	Cobb, W. G.	
,, ,,	Nolan, R. H.	
,, ,,	Johnson, W. B.	Seconded with Yellow Fever Commission, 30th Sept.
,, ,,	Doudney, L.	
,, ,,	Black, P. W.	
,, ,,	Johnston, J. E. L.	Supernumerary, Medical Research Institute, 18th June.
,, ,,	Hogan, J. C. C.	Appointed 26th Feb., 1913.
,, ,,	Beattie, J. A.	Do. 5th March, 1913.
,, ,,	Benson, J. M.	Do. 16th April, 1913.
,, ,,	Pearson, C. J. H.	Do. 6th August, 1913.
,, ,,	Wood, B. W. F.	Do. do. do.
,, ,,	Digby, W. E. S.	Do. 1st October, 1913.
,, ,,	Hannington, J. W. B.	Do. do. do.
Chief Dispenser and Storekeeper	Hughes, W. C.	Do. 1st January, 1913.
Two Staff Sergeants and Ten Sergeants	Non-Commissioned Officers, R.A.M.C., employed	
Male Nurse	Vincent, J. W.	
2 Senior Nurses	Ward, Miss M. A.	
	Clark, Miss J. A.	
12 Nurses		
2 Dispensers, Class ii.	Roberts, C. E.	
	Nicol, J. J.	
2 Dispensers, Class iii.	Coker, S. J.	
	Watson, T. J.	Appointed 1st August, 1913.



TEMPORARY EUROPEAN HOSPITAL—KADUNA.

PLAN OF KADUNA HOSPITAL

Scale 10 ft. = 1 in.

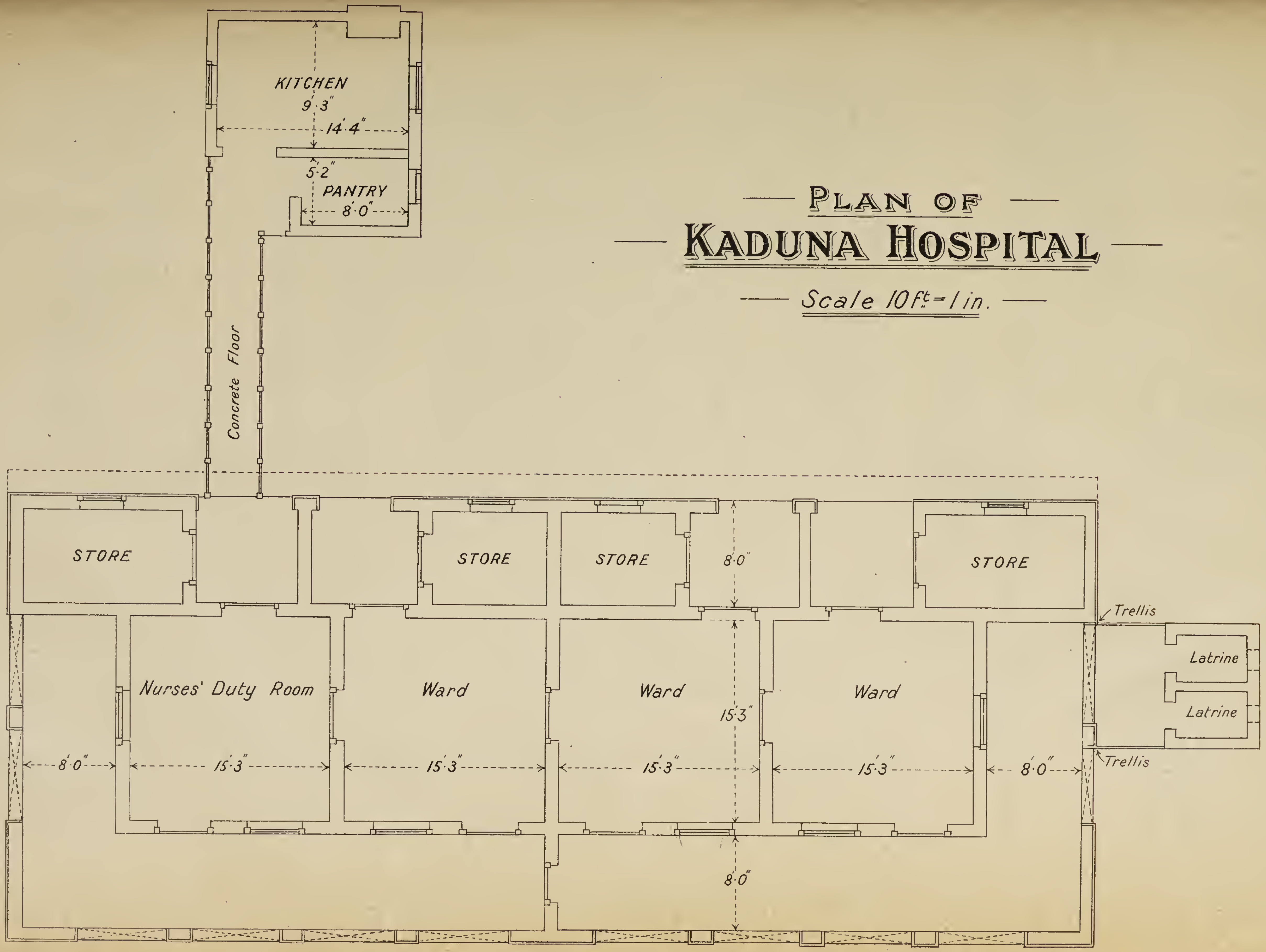


TABLE I.—*continued.*

Office.	Name.	Remarks.
4 Clerks, Class i.	Eshun, J. F.	
	Buckle, S. M.	
	Sam, F. M.	Resigned 27th April, 1913.
	Williams, E. A.	Transferred from Secretariat, 13th January, 1913.
	Benin, E. P....	Transferred from W.A.F.F., 28th April, 1913.
20 Dressers		
3 Headmen of Ambulance ...		
32 Ambulance Bearers		
20 Dispensary Attendants ...		
2 Messengers		
3 Cooks		
10 Ward Servants		

TABLE II.

EXPENDITURE.

MEDICAL.

	£	s.	d.
Personal Emoluments	31,507	4	1
Drugs, Instruments and Appliances	1,636	8	1
Hospital and Camp Equipment	199	15	5
Medical Comforts	129	19	1
Hospital Diet and Provisions	492	12	1
Light, Fuel, etc.	76	16	7
Horse Allowance	1,523	17	11
Outfits for Medical Subordinates	179	9	0
,, ,, Nursing Sisters	144	0	0
,, ,, Medical Officers	86	14	0
Contribution to Southern Nigeria for Medical Officers at Burutu			
Medical Examination of Officers in England	82	19	0
Expenses of N.C.O.'s and Nurses travelling in England ...	54	17	9
Scientific Instruments and Appliances...	114	18	6
Expenses of Medical Officers and Nurses at Tropical School and fees on engagement of Nurses	579	11	11
Fees for courses of study for promotion of Medical Officers ...	86	7	10
Expenses in connection with Isolation Hospitals	97	7	5
Expenses in connection with Research Work	24	1	10
Expenses in connection with segregation of Lepers			
Vaccination expenses	453	13	0
Extra Medical Assistance	42	8	9
Medical Research Institute	191	4	2
Fees to Medical Officers for Post-mortems	132	6	0
Share of expenditure Advisory Medical and Sanitary Committee	95	10	10
Cost of printing Report on Yellow Fever	42	2	6
Total	£37,974	5	9

SANITATION.

	£	s.	d.
Personal Emoluments	1,917	17	9
Horse Allowance	58	2	6
Kerosene and Disinfectants	197	0	10
Laboratory Equipment and Upkeep	72	1	6
Sanitary Labourers at Out-Stations	461	19	10
Sanitary Labourers for Burutu Beach	20	13	9
Total	£2,727	16	2

METEOROLOGICAL RETURN FOR THE YEAR 1913.

ZUNGERU.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	100	56	44	80·9	...	42	E.
February ...	102	60	42	83·4	...	41	S.
March ...	105	65	40	86·3	...	54	E.
April ...	106	67	39	87·5	4·47	74	S. & S.W.
May... ...	100	69	31	84·3	1·59	79	S.
June ...	99	69	30	82·6	2·85	79	,,
July... ...	92	66	26	78·1	7·94	87	,,
August ...	91	65	26	78·2	10.39	84	S.E.
September ...	93	66	27	78·6	6·65	80	S.
October ...	95	65	30	79·7	1·28	74	S.E.
November ...	97	58	39	78·1	...	36	,,
December ...	99	59	40	79·2	...	28	N.E.
Year ...	106	56	50	81·4	35·17	63	S.

LOKOJA.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	97	60	37	80·4	...	61	S.E.
February ...	100	64	36	85·6	·75	63	S.W.
March ...	101	64	37	82·4	·53	53	S.E.
April ...	101	69	32	85·9	4·61	63	,,
May... ...	96	69	27	83·5	3·37	69	S.W.
June ...	97	69	28	82·2	2.53	67	S.E.
July... ...	92	64	28	78·2	5·16	77	S.W.
August ...	89	68	21	78·4	9·17	78	,,
September ...	90	68	22	79·	5·48	79	S.E.
October ...	95	68	27	80·6	3·14	75	S.W.
November ...	95	60	35	79·1	...	65	S.E. & S.W.
December ...	95	52	43	77·7	...	61	N.E.
Year ...	101	52	49	81·	34·76	67	S.E.

KANO.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	94	49	45	70·3	...	32	N.E.
February ...	100	53	47	74·9	...	32	,,
March ...	108	50	58	77·2	...	27	E.
April ...	113	60	53	88·4	...	35	S.W.
May... ...	112	69	43	90·2	2·50	45	,,
June ...	108	70	38	87·8	2·87	51	,,
July... ...	98	65	33	81·4	5·41	68	,,
August ...	97	68	29	81·3	5·36	68	,,
September ...	106	60	46	81·7	2·71	68	,,
October ...	102	59	43	83·4	·20	48	,,
November ...	99	51	48	74·9	...	27	N.E.
December ...	95	45	50	70·9	...	29	,,
Year ...	113	45	68	80·2	19·05	44	S.W.

YOLA.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	98	63	35	81·1	...	53	N.W.
February ...	104	70	34	86·6	...	56	,,
March ...	108	65	43	86·7	...	60	N.E.
April ...	108	75	33	90·4	2·63	62	W.
May... ...	102	69	33	86·4	3·25	69	,,
June ...	101	68	33	84·5	3·80	72	,,
July... ...	96	68	28	80·9	5·12	73	,,
August ...	96	66	30	7 ·5	4·18	79	,,
September ...	92	63	29	79·	6·46	79	W. & N.W.
October ...	95	66	29	80·6	4·49	75	W.
November ...	98	62	36	80·	...	49	E.
December ...	99	57	42	78·1	...	45	N.E.
Year ...	108	57	51	82·8	29·93	64	W.

BAUCHI.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	92	...	...	..	...	32	N.E.
February ...	97	61	36	79·1	...	26	,,
March ...	102	56	46	79·8	...	24	,,
April ...	103	56	47	86·3	1·01	45	S.W.
May... ...	100	66	34	84·3	3·64	60	,,
June ...	100	65	35	82·5	3·42	60	,,
July... ...	95	65	30	78·1	9·02	68	,,
August ...	90	64	26	76·7	8·91	74	,,
September ...	90	64	26	76·8	7·39	71	,,
October ..	95	64	31	80·5	·50	52	E.,N.E., & S.E.
November ...	95	57	38	75·8	...	29	N.E.
December ...	95	53	42	72·5	...	30	,,
Year ...	103	53	50	79·3	33·89	47	S.W.

ILORIN.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	98	54	44	79	...	64	S.W.
February ...	99	58	41	83·5	·03	58	,,
March ...	102	63	39	84·1	·14	51	,,
April ...	102	67	35	83·7	4·58	67	,,
May... ...	96	66	30	80·4	7·28	78	,,
June ...	93	66	27	77·9	4·75	78	,,
July... ...	89	66	23	77·4	4·86	80	,,
August ...	93	67	26	77·6	10·96	81	,,
September ...	89	66	23	77·6	8·57	82	,,
October ..	94	67	27	79·2	2·65	75	,,
November ...	95	56	39	78·4	·01	62	N.E.
December ...	97	50	47	76·5	...	55	,,
Year ...	102	50	52	79·6	43·83	67	S.W.

GEIDAM.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	98	49	49	71·2	...	35	E. & N.E.
February ...	102	53	49	77·	...	31	N.E.
March ...	109	50	59	78·8	...	28	E. & N.E.
April ...	116	61	55	91·1	·35	27	S.W.
May... ...	113	71	42	91·5	1·32	38	,,
June ...	113	65	48	91·6	·20	31	W.
July... ...	106	70	36	88·6	1·36	48	,,
August ...	106	68	38	86·7	2·14	59	S.W.
September ...	107	69	38	87·7	·39	56	,,
October ..	107	63	44	87·7	...	35	E.
November ...	98	55	43	77·	..	32	N.E.
December ...	101	48	53	70·9	...	33	,,
Year ...	116	48	68	83·3	5·76	37	N.E.

MAIDUGURI.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	97	51	46	71·7	...	39	E. & N.E.
February ...	102	56	46	78·6	...	31	N.E.
March ...	111	55	56	80·1	...	29	N.E. & E.
April ...	115	64	51	89·7	1·10	33	E. & S.W.
May... ...	112	73	39	93·7	·47	43	S.W.
June ...	111	67	44	89·9	·27	43	,,
July... ...	104	67	37	87·3	2·88	55	,,
August ...	104	68	36	84·7	5·19	61	,,
September ...	105	70	35	85·1	3·65	60	,,
October ..	110	65	45	88·2	·42	37	N.E.
November ...	103	58	45	78·9	...	28	,,
December ...	100	50	50	73·1	...	30	,,
Year ...	115	50	65	83·4	13·98	40	S.W.

ZARIA.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	95	46	49	69·3	...	32	N.E.
February ...	100	51	49	75·3	·06	33	,,
March ..	105	50	55	76·	...	28	,,
April ...	101	57	44	81·9	3·00	64	S.W.
May... ..	97	59	38	80·3	4·64	69	,,
June ...	98	62	36	77·4	4·07	71	,,
July... ...	87	64	23	75·2	6·43	76	,,
August ...	89	63	26	75·5	10·12	82	,,
September ...	91	62	29	75·9	4·66	80	,,
October ...	94	55	39	77·5	·03	69	,,
November ...	94	50	44	70·8	...	37	N.E.
December ..	92	46	46	68·8	...	29	,,
Year ...	105	46	59	75·3	33·01	55	S.W.

KONTAGORA.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	101	56	45	79·9	..	23	N.E.
February ...	104	57	47	82·7	...	27	,,
March ..	106	65	41	85·2	...	35	,,
April ...	106	66	40	88·	1·82	49	S.W.
May... ..	100	69	31	85·	3·36	60	,,
June ...	*99	65	34	81·5	5·34	67	,,
July... ...	93	68	25	79·	5·72	77	,,
August ...	90	65	25	77·	9·51	76	,,
September ...	92	66	26	77·9	7·54	75	,,
October ...	94	59	35	79·2	2·98	70	,,
November ...	97	55	42	76·4	...	33	N.E.
December ..	102	51	51	76·6	...	26	,,
Year ...	106	51	55	80·7	36·27	51	S.W.

KATAGUM.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	98	47	51	71·8	...	40	N.E.
February ...	104	54	50	76·4	...	36	,,
March ..	109	50	59	80·6	...	29	,,
April ...	115	62	53	89·8	2·20	43	S.E.
May... ..	112	71	41	91·9	·98	47	S.W.
June ...	110	66	44	89·5	·43	47	W.
July... ...	102	68	34	84·4	4·71	62	,,
August ...	103	70	33	84·5	3·61	60	,,
September ...	104	65	39	84·5	1·65	61	S.W.
October ...	105	57	48	85·6	·23	35	E.
November ...	101	52	49	77·	...	27	E. & N.E.
December ..	95	46	49	71·	...	33	E.
Year ...	115	46	69	82·2	13·81	43	N.E.

SOKOTO.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January ...	92	58	34	74·3	...	26	N.E.
February ...	97	59	38	79·6	...	25	E.
March ..	110	57	53	82·5	...	21	N.E.
April ...	113	66	47	91·9	...	28	S.W.
May... ..	111	69	42	92·	2·56	44	,,
June ...	109	69	40	90·	2·18	43	,,
July... ...	98	67	31	83·	2·84	60	,,
August ...	99	67	32	82·4	5·12	62	,,
September ...	98	65	33	83·	3·68	66	,,
October ...	104	65	39	86·	...	49	,,
November ...	100	57	43	79·5	...	26	N.E.
December ..	96	53	43	75·7	...	30	,,
Year ...	113	53	60	83·3	16·38	40	S.W.

* For 22 days only.

Meteorological Return for the Year 1913—*continued.*

WOMBA.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January	96	55	41	79·5	1·00	37	E.
February	99	63	36	82·9	·10	48	,,
March	105	60	45	84·	...	44	,,
April	100	67	33	83·4	3·58	66	W. & S.W.
May	95	68	27	81·4	3·35	72	W.
June	96	67	29	79·2	5·24	71	W. & S.W.
July	91	65	26	77·2	9·73	79	S.W.
August	93	65	28	76·1	14·95	82	,,
September	95	65	30	77·2	16·58	79	S.
October	99	65	34	79·7	4·41	75	W. & S.
November	98	56	42	75·3	...	46	N.E.
December	97	47	50	74·4	...	37	N.E. & S.E.
Year	105	47	58	79·2	58·94	61	Various

NAFADA.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January	98	45	53	70·6	...	30	N.E.
February	104	49	55	77·9	...	31	,,
March	110	50	60	78·5	...	28	,,
April	110	58	52	89·1	1·26	48	N.E. & S.W.
May	109	67	42	90·2	2·63	51	W.
June	107	66	41	88·4	·78	51	N.W.
July	100	65	35	84·2	3·82	64	S.W.
August	100	66	34	82·7	4·64	72	,,
September	98	66	32	82·	2·57	78	,,
October	104	58	46	83·6	·88	...	,,
November	99	51	48	75·3	...	44	N.E.
December	101	43	58	70·5	...	40	,,
Year	110	43	67	81·0	16·58	48	N.E.

BARO.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January	99	64	35	82·3	...	49	S.W.
February	104	70	34	88·1	·10	58	,,
March	108	70	38	88·8	·07	46	S.
April	108	74	34	89·7	1·54	58	S.W.
May	105	64	41	84·5	3·67	68	,,
June	101	70	31	84·3	6·56	72	,,
July	96	69	27	80·8	12·35	76	,,
August	97	70	27	81·7	5·24	78	,,
September	98	69	29	82·4	5·27	75	,,
October	100	69	31	83·5	4·70	74	,,
November	101	64	37	83·6	...	60	,,
December	102	57	45	81·4	..	58	N.W.
Year	108	57	51	84·2	39·50	64	S.W.

BIRNIN-KEBBI.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January	102	50	52	72·4	...	51	N.E.
February	104	55	49	79·	...	47	,,
March	108	54	54	81·5	...	47	,,
April	109	63	46	89·2	3·32	55	S.W.
May	108	68	40	89·7	4.00	51	,,
June	104	71	33	87·8	1·37	52	,,
July	99	67	32	82·6	5·14	65	,,
August	98	67	31	81·5	4·80	68	,,
September	97	67	30	82·7	4·74	66	,,
October	103	66	37	85·5	...	55	,,
November	101	55	46	77·6	...	30	N.E.
December	96	51	45	74·2	...	29	,,
Year	109	50	59	81·9	23·37	51	S.W.

NARAGUTA.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January	87	46	41	68·6	...	32	N.E.
February	93	51	42	73·3	·05	35	E.
March	96	50	46	73·	..	43	N.E. & E.
April	97	56	41	76·3	2·31	53	S.W. & N.E.
May	92	57	35	74·	9·71	64	S.W.
June	90	56	34	72·4	7·13	61	W.
July	90	55	35	70·9	11·56	66	S.W.
August	86	54	32	70·1	10·00	63	,,
September	90	56	34	71·2	9·50	65	S.W. & E.
October	89	56	33	72·7	1·11	57	N.E.
November	89	55	34	71·7	...	71	,,
December	89	50	39	69·1	...	35	,,
Year	97	46	51	71·9	51·37	51	N.E.

IBI.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January	100	52	48	79·4	...	35	N.E.
February	101	62	38	84·4	...	48	S.W.
March	105	64	41	86·3	...	40	,,
April	104	70	34	86·1	2·26	65	,,
May	98	67	31	83·4	4·20	73	,,
June	95	68	27	80·9	4·29	76	,,
July	88	67	21	80·	9·14	80	,,
August	90	66	24	78·7	7·10	83	,,
September	92	68	24	78·6	12·03	83	,,
October	93	67	26	80·3	4·40	79	,,
November	95	58	37	77·6	...	54	N.E.
December	97	53	44	76·2	...	40	,,
Year	105	52	53	80·9	43·42	63	S.W.

ANKPA.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January	97	64	33	80·7	...	56	N.E.
February	97	66	31	82·6	...	70	S.W.
March	99	66	33	83·5	·05	54	,,
April	97	67	30	81·3	4·52	76	,,
May	92	68	24	79·8	3·77	76	,,
June	92	65	27	78·3	5·77	79	,,
July	87	65	22	76·	8·07	86	,,
August	86	66	20	75·7	10·38	87	,,
September	89	65	24	76·1	11·02	87	,,
October	91	65	26	78·	4·99	83	,,
November	92	65	27	78·2	1·21	64	E.
December	93	62	31	78·2	...	49	,,
Year	99	62	37	79·0	49·78	72	S.W.

KADUNA.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January	93	51	42	72·8	...	...	N.E.
February	99	53	46	76·2	·11	25	,,
March	102	55	47	77·5	...	29	,,
April	101	62	39	83·5	2·16	57	S.W.
May	96	64	32	80·2	5·81	68	,,
June	96	66	30	78·4	5·22	74	,,
July	88	64	24	75·1	11·81	81	,,
August	89	63	25	75·6	11·53	80	,,
September	89	64	25	75·8	13·59	79	,,
October	91	59	32	77·3	1·71	71	,,
November	93	52	41	71·9	...	42	N.E.
December	94	45	49	70·2	...	37	,,
Year	102	45	57	76·2	51·94	58	S.W.

JEBBA.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January	96	67	29	82·4	...	...	...
February	103	72	31	88·4	...	53	S.
March	106	71	35	88·	·15	47	,,
April	106	72	34	89·9	·59	58	S.W.
May	102	66	36	85·7	6·63	62	,,
June	99	69	30	83·2	3·88	68	,,
July	93	68	25	78·2	4·55	77	,,
August	93	69	24	80·5	5·93	76	,,
September	92	67	25	79·4	6·50	78	,,
October	95	70	25	82·8	1·33	78	,,
November	95	64	31	80·8	...	52	N.E.
December	97	64	33	80·8	...	35	,,
Year	106	64	39	83·3	29·56	56	S.W.

OFFA.

Month.	Temperature.				Rainfall.		Wind.
	Shade Max.	Shade Min.	Range.	Mean.	Amount in inches.	Degree of Humidity.	
January	101	64	37	85·2	...	...	...
February	97	63	34	82·4	·89	62	...
March	98	64	34	83·	...	61	S.W.
April	100	67	33	81·9	27·1	76	,,
May	94	65	29	79·1	8·05	76	,,
June	92	65	27	77·8	5·29	78	S.
July	89	65	24	76·3	5·48	82	S.W.
August	87	67	20	75·8	7·45	84	S.
September	88	64	24	75·7	7·25	84	S.W.
October	91	66	25	77·6	3·70	76	,,
November	95	60	35	78·1	...	68	,,
December	96	56	40	77·2	...	50	N.E.
Year	101	56	45	79·1	40·82	72	S.W.

Table VI.

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1913.

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Infective Diseases :—											
Anthrax	...	...	...	...	...	...	...	1	1	...	...
Blackwater Fever ...	1	8	9	2	5	...	...	...	...	...	...
Beri-Beri	...	1	1	...	...	...	...	1	1	...	...
Chicken-pox	...	2	2	...	...	1	1	6	7	...	1
Cow-pox	...	...	...	...	...	...	...	3	3	...	1
Dysentery...	...	14	14	...	...	1	8	143	151	21	4
Enteric Fever	...	1	1	...	1	...	...	12	12	1	...
Enteritis-infective ...	...	2	2	...	...	...	...	...	...	...	...
Erysipelas...	...	...	...	...	...	...	...	1	1	...	...
Gangrene	...	...	...	...	...	...	...	2	2	...	1
Gonorrhœa	...	...	...	...	...	...	4	655	659	...	23
Influenza	...	...	...	...	...	...	...	12	12	...	...
Mycetoma	...	...	...	...	...	...	...	1	1	...	1
Malaria	...	63	63	...	5	1	6	410	416	2	1
Measles	...	4	4	...	...	...	...	13	13	...	...
Mediterranean Fever ...	...	...	...	...	...	...	...	1	1	1	...
Mumps	...	...	...	...	...	...	...	1	1	...	1
Pneumonia	...	1	1	...	...	1	...	38	38	14	4
Pyæmia	...	...	...	...	...	...	...	2	2	1	...
Pyrexia of uncertain origin	...	2	2	...	1	...	2	29	31	...	...
Rheumatic Fever... ...	...	2	2	...	1	...	2	54	56	1	...
Septicæmia	...	...	...	...	...	...	...	4	4	2	...
Sleeping Sickness	...	...	...	...	...	...	...	4	4	2	...
Small-pox	...	...	...	...	...	...	...	51	51	14	29
Syphilis	...	...	...	...	...	...	2	102	104	3	29
Tetanus	...	...	...	...	...	...	...	2	2	2	...
Tuberculosis	...	...	...	...	...	...	...	4	4	3	...
Yaws	...	...	...	...	...	...	...	7	7	...	...
Anæmia	...	5	5	...	2	...	...	14	14	1	...
Leukæmia	...	...	...	...	...	...	...	1	1	1	...
Lymphadenoma	...	...	...	...	...	...	...	1	1	1	...
Debility	...	...	...	...	...	...	...	25	25	7	...
Alcoholism	...	3	3	1	1	...	...	1	1	1	...
New Growths, Non-Malignant :—											
Lipoma	...	...	...	...	...	...	...	1	1	...	...
Fibroma	...	...	...	...	...	...	...	1	1	...	...
New Growths, Malignant :—											
Carcinoma	...	...	...	...	...	...	...	1	1	1	...
Cyst :—											
Ganglion	...	...	...	...	...	...	...	4	4	...	...
Effects of Parasites :—											
Trematoda :—											
Bilharzia Hæmatobia ...	...	...	...	...	...	...	...	3	3	...	...
Schistosomiasis... ...	...	...	...	...	...	...	...	1	1	...	...
Cestoda :—											
Tænia Solium	...	...	...	...	...	...	1	32	33	...	...
,, Saginata ...	...	...	...	...	...	...	...	85	85	...	...
Not identified	...	...	...	...	...	...	...	4	4	...	1
Carried forward ...											

Return of Diseases and Deaths (In-Patients) for the Year 1913—*continued.*

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Brought forward ...											
Effects of Parasites—*contd.*											
Nematoda :—											
Ascaris Lumbricoides	...	...	...	...	...	...	...	2	2	...	...
Dracunculus Medinensis	.	...	...	...	...	...	...	234	234	...	11
Filariasis	...	...	...	...	...	...	...	7	7	...	...
Ankylostomiasis	...	...	...	...	...	...	...	90	90	3	...
Trichocephalus Dispar	...	...	...	...	...	...	...	1	1	...	...
Hyphomcetes :—											
Tinea Trichophytina	...	...	...	...	...	...	...	1	1	...	...
,, Circinata	...	...	...	...	...	...	...	2	2	...	...
Unclassified :—											
Craw-Craw	...	...	...	...	...	...	1	38	39	...	1
Effect of Injuries.											
Burns	...	...	...	...	.	...	...	15	15	2	2
Scalds	...	...	...	...	...	...	...	2	2	...	...
Sunstroke	...	6	6	...	2	...	...	...	...	...	...
Heatstroke	...	1	1	...	...	...	...	...	...	...	...
Shock	...	...	...	...	...	...	...	1	1	1	...
Abrasions	...	...	...	...	...	...	...	35	35	...	1
Contusions	...	1	1	...	...	...	...	72	72	...	2
Wounds	...	2	2	...	...	...	1	284	285	2	26
Wounds, gunshot	...	...	...	...	...	...	...	4	4	1	1
,, arrow	...	...	...	...	...	...	...	1	1	1	...
Sprains	...	2	2	...	...	...	...	20	20	...	2
Rupture of Urethra	...	...	..	...	...	...	...	1	1	...	...
Strains	...	...	...	...	...	...	...	1	1	...	...
Fractures	...	3	3	1	1	...	2	23	25	2	6
Dislocations	...	...	...	...	...	...	...	4	4	1	...
Bite, Human	...	...	...	...	...	...	...	2	2	...	...
Amputation	...	...	...	...	...	...	...	1	1	...	...
Other minor injuries	...	...	...	...	...	...	...	10	10	...	...
Effects of Foreign Bodies :—											
In Eye	...	...	...	...	...	...	...	2	2	...	...
Effects of Poisons :—											
Venon of Snake	...	...	...	...	...	...	...	10	10	2	..
,, ,, Scorpion	...	...	...	...	...	...	...	3	3	...	...
Diseases of Nervous System :—											
Neuritis	...	1	1	...	...	...	1	...	1	...	...
Polyneuritis	1	...	1	...	1	...	...	...	...	...	...
Meningitis	...	...	...	...	...	...	...	3	3	2	1
Hæmatomyelia	...	...	...	...	...	...	...	1	1	1	...
Paralysis	...	...	...	...	...	...	...	1	1	1	...
Hemiplegia	..	...	...	...	...	...	...	1	1	...	...
Chorea	...	...	...	...	...	...	...	1	1	...	1
Convulsions	...	...	...	...	...	...	...	1	1	1	...
Epilepsy	...	...	...	...	...	..	...	3	3	...	...
Vertigo	...	...	...	...	...	...	..	1	1	...	...
Headache	...	2	2	...	...	...	...	16	16	...	...
Neuralgia	...	...	...	...	...	...	2	7	9	...	1
Delirium	...	1	1	...	1	...	...	...	...	...	...
Carried forward ...											

Return of Diseases and Deaths (In-Patients) for the Year 1913—*continued.*

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Brought forward ...											
Diseases of Nervous System—*contd.*											
Neurasthenia	...	2	2	...	1	...	...	...	...	...	...
Hysteria	...	1	1	...	1	...	...	...	...	...	...
Melancholia	...	1	1	...	...	...	...	...	...	...	...
Delusional Insanity ...	...	1	1	...	1	...	...	1	1	...	...
Dementia	...	...	...	...	...	...	1	...	1	...	...
Diseases of the Eye :—											
Conjunctivitis	...	2	2	...	...	...	...	74	74	...	4
Trachoma	...	...	...	...	...	...	...	1	1	...	...
Keratitis	...	1	1	...	1	...	...	4	4	...	...
Ulcer of Cornea	...	...	...	...	...	...	...	3	3	...	...
Iritis	...	...	...	...	...	...	...	5	5	...	...
Iridoplegia	...	1	1	...	1	...	...	...	...	...	...
Blepharitis Marginalis ...	...	...	...	...	...	...	...	2	2	...	...
Astigmatism	...	1	1	...	1	...	...	...	...	...	...
Sty	...	...	...	...	...	...	...	2	2	...	...
Opacity	...	...	...	...	...	...	...	2	2	...	...
Entropion	...	...	...	...	...	...	...	1	1	...	...
Diseases of the Ear :—											
Inflammation of External Meatus	...	...	...	...	...	...	...	4	4	...	...
Inflammation of Middle Ear	...	...	...	...	...	...	...	10	10	...	...
Diseases of the Nose :—											
Epistaxis	...	...	...	...	...	...	...	1	1	...	...
Diseases of Circulatory System :—											
Pericarditis	...	...	...	...	...	...	...	1	1	1	...
Endocarditis	...	...	...	...	...	...	...	1	1	...	...
Valvular Mitral	...	1	1	...	1	...	...	3	3	2	...
,, Aortic	...	...	...	...	...	...	...	4	4	1	...
Myocarditis	...	...	...	...	...	...	...	1	1	...	...
Syncope	...	...	...	...	...	...	...	1	1	1	...
Disordered Action of Heart	...	...	...	...	...	...	...	3	3	...	1
Varix	...	...	...	...	...	...	...	1	1	...	...
Sardiac Debility	...	...	...	...	...	...	...	1	1	...	...
Thrombosis	...	1	1	...	...	...	...	...	...	...	...
Diseases of the Respiratory System :—											
Laryngitis...	...	...	...	...	...	...	...	1	1	...	...
Bronchitis, Acute... ...	...	...	...	...	...	...	2	76	78	...	7
,, Catarrhal ...	...	2	2	...	...	1	...	67	67	...	...
Broncho-Pneumonia ...	...	...	...	...	...	...	...	6	6	...	1
Phthisis	...	...	...	...	...	...	...	6	6	3	...
Pleurisy	...	...	...	...	...	...	...	26	26	3	1
Pleurodynia	...	...	...	...	...	...	...	1	1	...	...
Carried forward ...											

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1913—*continued.*

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Brought forward ...											
DISEASES OF THE DIGESTIVE SYSTEM :—											
Stomatitis	...	1	1	...	...	...	...	...	...	...	...
Caries of Teeth	...	...	...	...	...	...	...	4	4	...	...
Inflamation Dental Periosteum	...	...	...	...	...	...	...	1	1	...	...
Gum-boil	...	...	...	...	...	...	...	1	1	...	...
Toothache...	...	...	...	...	...	...	...	2	2	...	...
Sore Throat	...	...	...	...	...	...	..	1	1	...	...
Distended large intestines	...	...	...	...	...	...	...	1	1	...	...
Jaundice	...	...	...	...	..	...	...	1	1	...	...
Alveolar Abscess	...	3	3	...	3	...	...	...	...	...	...
Tonsillitus	...	3	3	...	...	...	...	7	7	...	...
Pharyngitis	...	1	1	...	...	...	...	4	4	...	1
Gastritis	...	8	8	...	...	...	...	17	17	...	...
Indigestion	...	2	2	...	2	...	1	25	25	...	...
Gastralgia...	...	3	3	...	...	...	...	...	...	...	...
Enteritis	...	4	4	...	...	...	...	9	9	1	1
Appendicitis	...	1	1	...	1	...	...	1	1	1	...
Colitis	...	6	6	...	1	...	...	13	13	2	...
Atrophy of Intestines ...	...	...	...	...	...	...	...	1	1	1	...
Hernia, Inguinal	...	...	...	...	...	...	...	12	12	...	1
Diarrhœa	...	4	4	...	1	...	3	139	142	8	4
Colic	...	...	...	...	...	...	...	14	14	...	1
Fistula in Ano	...	...	...	...	...	...	...	2	2	...	...
Recto-Vaginal Fistula ...	...	...	...	...	...	...	...	1	1	...	...
Piles	...	1	1	...	...	...	1	5	6	...	...
Prolapse Rectum	...	...	...	...	...	...	...	2	2	...	...
Hepatitis	...	2	2	1	...	...	...	4	4	...	...
Congestion of the Liver ...	...	2	2	...	...	...	...	1	1	1	...
Peritonitis	...	...	...	...	...	...	...	3	3	3	...
Periproctitis	...	1	1	...	1	...	...	...	...	...	...
Dropsy	...	...	...	...	...	...	2	8	10	2	1
Constipation	...	...	...	...	...	...	...	95	95	...	1
Ischio-Rectal Abscess ...	...	1	1	...	...	...	...	...	...	...	...
DISEASES OF THE LYMPHATIC SYSTEM :—											
Inflammation of Lymphatic Gland	...	1	1	...	...	...	...	27	27	...	1
Suppuration of Lymphatic Gland	...	...	...	...	...	...	2	4	6	...	...
Lymphangitis	...	2	2	...	2	...	...	6	6	...	...
Elephantiasis	...	...	...	...	...	...	...	3	3	1	...
DISEASES OF THE URINARY SYSTEM :—											
Nephritis	...	...	...	...	...	...	...	4	4	2	...
Kidney Abscess	...	...	...	...	...	...	...	1	1	1	...
Pyelitis	...	...	...	...	...	...	...	1	1	...	...
Renal Calculus	...	2	2	...	1	...	...	...	...	...	...
Stricture	...	...	...	...	...	...	...	3	3	...	1
Inflammation of the Bladder	...	1	1	...	...	...	...	5	5	...	2
Carried forward ..											

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1913—*continued.*

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Brought forward ...											
DISEASES OF THE URINARY SYSTEM—*contd.*											
Retention of Urine ...	...	...	...	...	...	...	...	2	2	...	...
Hæmaturia	...	...	...	...	...	...	...	2	2	...	...
Uræmia	...	...	...	...	...	...	...	1	1	1	...
DISEASES OF THE GENERATIVE SYSTEM :—											
Urethritis	...	...	...	...	...	...	...	2	2	...	...
Urethral Fistula	...	...	...	...	...	...	...	1	1	...	1
Prostatitis...	...	...	...	...	...	...	...	2	2	...	...
Periprostatic Abscess ...	...	...	...	...	...	...	...	1	1	...	...
Phimosis	1	1	2	...	...	...	...	15	15	...	...
Paraphimosis	...	...	...	...	...	...	...	5	5	...	1
Vaginal Fistula	...	...	...	...	...	...	...	1	1	...	...
Softchancre	...	...	...	...	...	...	...	20	20	...	1
Hydrocele of Cord ...	...	...	...	...	...	...	...	1	1	...	...
Varicocele...	...	...	...	...	...	...	...	1	1	...	...
Hydrocele...	...	...	...	...	...	...	1	14	15	...	1
Orchitis	...	1	1	...	1	...	...	13	13	...	...
Ulcer of Penis	...	1	1	...	1	...	...	5	5	...	3
Epididymitis	...	2	2	...	2	...	...	3	3	...	...
Salpingitis	...	...	...	...	...	...	...	1	1	...	...
AFFECTIONS CONNECTED WITH PREGNANCY :—											
Metritis	...	...	...	...	...	...	...	1	1	...	...
AFFECTIONS CONNECTED WITH PARTURITION :—											
Contraction of pelvis ...	...	...	...	...	...	...	...	1	1	...	...
Retention of placenta ...	...	...	...	...	...	...	...	2	2	...	...
Malposition of fœtus ...	...	...	...	..	...	...	...	1	1	1	...
AFFECTIONS CONSEQUENT ON PARTURITION :—											
Venous Thrombosis ...	...	...	...	...	...	...	...	1	1	1	...
Mastitis	...	...	...	...	...	...	...	1	1	...	...
Puerperal Septic Intoxication	...	...		...	...	...	...	2	2	2	...
DISEASES OF THE ORGANS OF LOCOMOTION :—											
Periostitis	...	...	...	...	...	...	...	5	5	..	1
Arthritis	...	...	...	...	...	...	...	4	4	...	...
Synovitis	...	...	...	..	..	...	1	28	29	...	1
Myositis	...	3	3	...	...	...	1	10	11	...	1
Myalgia	...	...	..	...	...	...	1	63	64	...	3
Caries of Sacrum ...	...	...	...	...	...	...	...	1	1	...	1
DISEASES OF THE CONNECTIVE SYSTEM :—											
Inflamation	...	3	3	...	...	...	2	45	47	3	3
Abscess	...	2	2	...	...	...	2	124	126	2	9
Œdema	...	...	...	...	...	...	...	7	7	...	1
Carried forward ...											

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1913—*continued.*

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Brought forward ...											
DISEASES OF THE SKIN :—											
Erythema	...	...	...	...	...	...	1	1	2	...	...
Urticaria	...	...	...	...	...	...	...	4	4	...	...
Eczema	...	...	...	...	...	...	...	1	1	...	...
Impetigo Contagiosa . .	...	...	...	...	...	...	...	1	1	...	...
Sycosis	...	...	...	...	...	...	...	1	1	...	...
Corn	...	...	...	...	...	...	...	2	2	...	...
Boil	...	3	3	...	...	...	...	18	18	...	...
Herpes	...	1	1	...	...	...	...	5	5	...	1
Psoriasis	...	...	...	...	...	...	...	1	1	...	...
Carbuncle...	...	...	...	...	...	...	...	1	1	...	1
Dermatitis	...	...	...	...	...	...	...	1	1	...	...
Pemphigus	...	...	...	...	...	...	...	1	1	...	...
Wart	...	...	...	...	...	...	...	1	1	...	...
Whitlow	...	...	...	...	...	...	...	6	6	...	...
Ulcer	...	...	...	...	...	...	...	57	57	...	4
Sebaceous Cyst	...	1	1	...	...	...	...	1	1	...	...
TOTAL :—	3	208	211	5	44	5	54	3858	3912	143	212

SUMMARY OF CASES TREATED IN HOSPITALS (ALL DISEASES).

HOSPITAL AT	EUROPEANS.						OTHERS.				
	Remained.	Yearly Total.				Remaining.	Remained.	Yearly Total.			Remaining.
		Admitted.	Total cases treated.	Died.	Invalided.			Admitted.	Total cases treated.	Died.	
Zungeru	1	99	100	2	33	...	30	650	680	19	20
Lokoja	2	85	87	2	7	2	22	724	746	24	13
Kaduna	...	24	24	1	4	3	...	508	508	6	19
Baro	...	...	...	...	...	...	2	71	73	5	7
Abinsi	...	...	...	...	...	...	...	84	84	1	3
Bauchi	...	...	...	...	...	...	...	75	75	...	9
Ibi	...	...	...	...	...	...	...	54	54	4	8
Ilorin	...	...	...	...	...	...	...	62	62	3	1
Jebba	...	...	...	...	...	...	...	32	32	6	...
Kano	...	...	...	...	...	...	...	818	818	15	36
Katagum	...	...	...	...	...	...	...	113	113	1	5
Katsena	...	...	...	...	...	...	...	23	23	4	2
Minna	...	...	...	...	...	...	...	45	45	11	3
Naraguta	...	...	...	...	...	...	...	81	81	16	10
Sokoto	...	...	...	...	...	...	...	114	114	1	10
Yola	...	...	...	...	...	...	...	78	78	3	3
Zaria	...	...	...	...	...	...	...	71	71	14	5
Maiduguri	...	...	...	...	...	...	...	255	255	10	58
TOTALS	3	208	211	5	44	5	54	3,858	3,912	143	212

Table VII.

RETURN OF DISEASES AND DEATHS (OUT-PATIENTS) FOR THE YEAR 1913.

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids			Admissions.	Total Cases Treated.	Deaths.	
Infective Diseases :—											
Blackwater Fever... ...	...	9	9	2	4	...	...	1	1	...	...
Beri-Beri	...	...	...	...	...	...	2	5	7	3	...
Chicken Pox...	...	2	2	...	...	...	...	26	26	...	1
Cow Pox	...	...	...	...	...	...	...	97	97	...	...
Diphtheria	...	...	...	...	...	...	...	1	1	...	...
Dysentery...	...	25	25	1	...	...	4	285	289	21	...
Enteric Fever	1	1	2	...	1	...	...	1	1	...	...
Enteritis Infective ...	...	...	...	...	...	...	...	2	2	...	...
Gangrene	...	1	1	...	...	...	...	1	1	1	...
Gonorrhœa	...	32	32	...	...	5	24	731	755	...	6
Influenza	...	9	9	...	2	...	...	23	23	...	...
Leprosy	...	...	...	...	...	...	708	243	951	113	784
Mycetoma	...	...	...	...	...	...	...	1	1	...	...
Malaria	1	306	307	1	3	3	6	1,146	1,152	3	8
Measles	...	3	3	...	...	...	...	4	4	...	...
Mumps	...	...	...	...	...	...	...	9	9	...	...
Osteo-Myelitis, acute infective	...	...	...	...	...	...	...	4	4	...	...
Pneumonia	...	1	1	...	1	...	2	151	153	24	1
Pyæmia	...	...	...	...	...	...	...	5	5	...	...
Pyrexia of uncertain origin	...	4	4	...	...	...	...	51	51	...	...
Rheumatic Fever... ...	...	8	8	...	...	...	4	330	334	...	3
Septicæmia	...	...	...	...	...	...	...	1	1	...	...
Sleeping Sickness	..	...	...	...	...	..	4	4	8	2	...
Small Pox...	1	...	1	...	...	...	9	335	344	55	...
Syphilis	...	10	10	...	...	1	50	371	421	...	26
Tuberculosis	...	2	2	...	...	...	2	15	17	7	...
Whooping-cough	...	...	...	...	...	...	1	...	1	...	...
Yaws	...	...	...	...	...	...	2	59	61	1	3
Tetanus	...	...	...	...	...	...	...	4	4	2	...
Cerebro-Spinal Fever ...	...	...	...	...	...	...	...	1	1	1	...
Undulant Fever	...	...	...	...	...	...	...	1	1	...	...
Pappataci Fever	...	1	1	...	...	...	...	...	...	...	...
General Diseases :—											
Anæmia	1	32	33	...	3	1	2	74	76	...	...
Debility	...	28	28	...	1	...	...	75	75	5	...
Gout	...	2	2	...	...	...	...	...	...	...	...
Rickets	...	...	...	...	...	...	...	1	1	...	...
Scurvy, Infantile	...	...	...	...	...	...	...	1	1	...	...
New Growths, Non-Malignant :—											
Lipoma	...	...	...	...	...	...	...	4	4	...	...
Fibroma	...	...	...	...	...	...	1	4	5	...	...
Adenoma	...	...	...	...	...	...	...	2	2	...	...
Papilloma	...	3	3	...	...	...	...	1	1	...	...
Pterygium...	...	...	...	...	...	...	...	2	2	...	...
Osteoma	...	...	...	...	...	...	...	1	1	...	...
Myoma	...	...	...	...	...	...	...	1	1	...	...
Carried forward ...											

Return of Diseases and Deaths (Out-Patients) for the Year 1913—*continued.*

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Brought forward ...											
New Growths, Malignant :—											
Carcinoma	...	...	...	...	...	..	1	2	3	...	...
Cysts :—	...	...	...	...	...	...	...	6	6	...	...
Ganglion	...	...	...	...	...	...	...	13	13	1	...
Thyroglossal	...	...	...	...	...	...	...	1	1	...	...
Meibomian	...	...	...	...	...	...	...	1	1	...	...
Tarsal	...	...	...	...	...	...	...	1	1	...	...
Effects of Parasites.											
Trematoda :—											
Bilharzia hæmatobia ...	...	...	...	...	...	...	...	13	13	...	...
Cestoda :—											
Tænia Solium	...	...	...	...	...	...	...	137	137	...	...
,, Saginata ...	...	4	4	...	...	...	1	425	426	...	3
Bothriocephalus latus ...	...	..	...	...	...	...	...	2	2	...	...
Intestinal Myiasis ...	...	1	1	...	...	...	...	...	...	...	...
Not identified	...	...	...	...	...	...	...	24	24	...	...
Nematoda :—											
Ascaris lumbricoides ...	...	1	1	...	...	...	...	84	84	...	...
Dracunculus medinensis	...	...	...	...	...	...	9	421	430	...	8
Filariasis	...	2	2	...	...	...	...	31	31	...	...
Ankylostomiasis ...	...	...	...	...	...	...	1	97	98	3	...
Oxyuris vermicularis ...	...	...	...	...	...	...	...	33	33	...	...
Trichocephalus dispar ...	...	...	...	...	...	...	...	1	1	...	...
Filaria volvulus ...	...	...	...	...	...	...	...	1	1	...	...
Microfilaria perstans ...	...	...	...	...	...	..	...	2	2	...	...
Insecta :—											
Pediculus Pubis ...	...	6	6	...	...	...	...	2	2	...	...
Pulex penetrans ...	...	...	...	...	...	...	3	3	6	...	...
Arachnida :—	...	...	...	...	...	...	...	3	3	...	...
Sarcoptes Scabiei ...	...	...	...	...	...	...	...	12	12	...	...
Blastomyces albicans ...	...	...	...	...	...	...	...	1	1	...	...
Hyphomycetes :—											
Tinea trichophytina ...	...	3	3	...	...	...	...	12	12	...	...
,, tonsurans ...	...	...	...	...	...	...	...	8	8	...	...
,, circinata ...	...	2	2	...	...	1	...	32	32	...	...
,, cruris	...	4	4	...	...	...	...	2	2	...	...
Unclassified :—											
Craw-Craw	...	2	2	...	...	...	2	312	314	...	3
Worm embryo, unknown	...	...	...	...	...	...	...	2	2	...	...
Effects of Injuries :—											
Burns	...	4	4	...	...	1	4	115	119	3	6
Scalds	...	2	2	...	...	...	...	15	15	...	...
Heatstroke	...	1	1	...	...	...	...	...	...	...	...
Sunstroke	...	20	20	...	...	...	...	4	4	1	...
Shock	...	...	...	...	...	...	...	21	21	20	...
Abrasions	...	11	11	...	...	...	2	684	686	...	8
Contusions	...	20	20	...	...	1	3	606	609	...	2
Wounds	...	21	21	...	...	...	25	2,823	2,848	1	47
Wounds, gun-shot ...	...	1	1	...	...	...	1	7	8	...	1
,, arrow	...	...	...	...	...	...	1	3	4	...	...
Sprains	...	23	23	...	...	...	1	141	148	...	1
Strains	...	9	9	...	...	...	...	52	52	...	1
Carried forward ...											

RETURN OF DISEASES AND DEATHS (OUT-PATIENTS) FOR THE YEAR 1913—*continued.*

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Brought forward ...											
EFFECTS OF INJURIES:—*cntd.*											
Fractures	...	11	11	...	...	2	2	68	70	...	2
Dislocations	...	1	1	...	...	...	1	12	13	1	1
Bite, Dog	...	1	1	...	...	...	...	...	...	...	...
,, Human	...	...	...	...	...	...	...	1	1	...	...
Other major injuries ...	...	1	1	...	...	...	...	5	5	1	...
Other minor injuries ...	1	11	12	...	...	...	34	957	991	1	...
EFFECTS OF FOREIGN BODIES:—											
In Eye	...	3	3	...	...	...	...	21	21	...	...
In Ear	...	1	1	...	...	...	...	3	3	...	...
In Rectum	...	1	1	...	...	...	...	...	...	...	...
In Bronchus	...	...	...	...	...	...	...	1	1	...	...
EFFECTS OF POISONS:—											
Ptomaine	...	6	6	...	...	...	...	...	...	...	...
Tobacco	...	1	1	...	...	...	...	...	...	...	...
Venom of Snake	...	...	...	...	...	...	...	22	22	1	...
,, ,, Scorpion ...	...	...	...	...	...	...	...	53	53	...	...
Other Stinging Insects ...	...	2	2	...	...	...	...	15	15	...	...
DISEASES OF THE NERVOUS SYSTEM:—											
Neuritis	...	4	4	...	...	...	...	11	11	...	1
Meningitis	...	...	...	...	...	...	...	2	2	2	...
Tabes dorsalis	...	...	...	...	...	...	...	1	1	...	...
Sciatica	...	2	2	...	...	...	...	3	3	...	...
Paralysis	...	...	...	...	...	...	...	1	1	...	1
Apoplexy	...	...	...	...	...	...	...	1	1	1	...
Hemiplegia	...	...	...	...	...	...	...	3	3	...	...
Torticollis...	..	...	...	...	...	...	...	3	3	...	...
Epilepsy	...	1	1	...	...	...	...	16	16	...	...
Vertigo	...	1	1	...	...	...	...	12	12	...	...
Headache	...	9	9	...	...	...	..	193	193	...	1
Neuralgia	1	13	14	...	...	1	1	117	118	...	...
Hysteria	...	1	1	...	...	...	...	...	...	...	...
Neurasthenia	...	16	16	...	1	...	...	5	5	...	...
Insomnia	...	4	4	...	...	...	...	...	...	...	...
Loss of Memory	...	1	1	...	1	..	...	...	...	...	...
Mania, acute	...	...	...	...	...	...	1	...	1	...	...
Mental Stupor	...	1	1	...	1	...	1	...	1	...	...
Delusional Insanity ...	...	...	...	...	...	...	...	1	1	...	...
Senile Dementia	...	...	...	...	...	...	...	1	1	...	...
Idiocy	...	...	...	...	...	...	...	1	1	...	...
Convulsion	...	...	...	...	...	...	...	2	2	...	...
Lateral sclerosis of cord ...	...	...	...	...	...	...	...	1	1	...	...
DISEASES OF THE EYE:—											
Conjunctivitis	...	12	12	...	...	...	10	876	886	...	3
Keratitis	...	2	2	...	1	...	...	16	16	...	...
Ulcer of Cornea	...	2	2	...	...	...	1	20	21	...	...
Iritis	...	1	1	...	...	...	...	16	16	...	1
Iridocyclitis	...	...	...	...	...	...	...	1	1	...	...
Astigmatism	...	1	1	...	...	...	...	...	...	...	...
Carried forward ...											

Return of Diseases and Deaths (Out-Patients) for the Year 1913—*continued.*

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Brought forward ...											
Diseases of the Eye :—*contd.*											
Hypopyon...	...	...	...	...	...	...	1	1	2	...	...
Entropion...	...	...	...	...	...	...	...	2	2	...	...
Cataract	...	...	...	...	...	...	...	1	1	...	...
Trachoma	...	...	...	...	...	...	...	1	1	...	...
Chemosis	...	...	...	...	...	...	...	5	5	...	...
Eye-strain...	...	2	2	...	1	...	...	...	...	...	...
Œdema Eyelid	...	...	...	...	...	...	...	4	4	...	...
Dacryo-Cystitis	..	...	...	...	...	...	...	1	1	...	...
Blepharitis Marginalis ...	...	...	...	...	...	...	...	9	9	...	1
Sty	...	1	1	...	...	...	...	28	28	...	1
Opacity	...	...	...	...	...	...	...	5	5	...	...
Glaucoma	...	...	...	...	...	...	...	3	3	...	...
Choroditis...	...	...	...	...	...	...	...	1	1	...	...
Myopia	...	...	...	...	...	...	...	1	1	...	...
Diseases of the Ear :—											
Inflammation, External Meatus	...	2	2	...	...	...	...	34	34	...	...
Suppuration	...	1	1	...	..	...	...	2	2	...	...
Accumulation of Wax ...	...	10	10	...	...	...	...	36	36	...	1
Inflammation Middle Ear	...	3	3	...	...	...	1	58	59	...	1
Perforation of Membrana tympani	...	...	...	...	...	...	...	6	6	...	...
Deafness	...	...	...	...	...	...	...	6	6	...	...
Earache	...	...	...	...	...	...	...	1	1	...	...
Otorrhœa	...	...	...	...	...	...	...	3	3	...	...
Diseases of the Nose :—											
Rhinitis	...	4	4	...	...	...	...	18	18	...	...
Coryza	...	1	1	...	...	...	...	...	...	...	...
Epistaxis	...	...	...	...	...	...	...	2	2	...	...
Perforation of Septum Nasi.	...	1	1	...	...	..	...	...	...	...	...
Diseases of the Circulatory System :—											
Pericarditis	...	1	1	...	...	...	...	...	...	...	...
Endocarditis	...	...	...	...	...	...	...	3	3	...	...
Valvular, Mitral	...	...	...	...	...	...	...	10	10	4	...
,, Aortic	...	...	...	...	...	...	...	3	3	...	...
Pulmonary Embolism ...	...	...	...	...	...	...	...	1	1	1	...
Aneurism	...	...	...	...	...	...	..	2	2	...	...
Myocarditis	...	...	...	...	...	...	2	...	2	...	...
Palpitation	...	...	...	...	...	...	...	1	1	...	...
Syncope	...	...	...	...	...	...	...	1	1	1	...
Angina Pectoris	...	1	1	...	...	...	...	...	...	...	...
Disordered action of Heart	...	1	1	...	...	...	...	13	13	...	2
Phlebitis	...	1	1	...	...	...	...	...	...	...	...
Periphlebitis	...	1	1	...	...	...	...	...	...	...	...
Varix	...	...	...	...	...	...	...	2	2	...	...
Congenital Heart Disease	...	...	...	...	...	...	...	1	1	1	...
Thrombosis	...	1	1	...	...	...	...	...	...	...	...
Cardiac Hypertrophy ...	...	...	...	...	...	...	..	1	1	...	...
Carried forward ...											

Return of Diseases and Deaths (Out-Patients) for the Year 1913—*continued.*

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Brought forward											
Diseases of the Respiratory System :—											
Empyema	...	...	...	...	...	...	...	1	1	...	...
Asthma	...	1	1	...	...	...	...	6	6	...	...
Laryngitis	...	6	6	...	...	...	...	38	38	...	1
Tracheitis	...	1	1	...	...	...	...	2	2	...	...
Bronchitis...	1	48	49	...	...	...	10	1,451	1,461	3	7
Broncho-Pneumonia ...	...	...	...	...	...	...	...	10	10	...	1
Phthisis	...	2	2	...	1	...	1	13	14	5	...
Pleurisy	1	6	7	...	...	...	1	74	75	...	...
Pleurodynia	...	...	...	...	...	...	...	21	21	...	...
Hæmothorax	...	...	...	...	...	...	...	1	1	1	...
Diseases of the Digestive System :—											
Stomatitis...	...	5	5	...	...	...	...	43	43	...	...
Caries of Teeth	...	11	11	...	...	...	1	160	161	...	1
Suppuration of Gums ...	...	...	...	...	...	...	...	16	16	...	...
Inflammation, Dental periosteum	...	11	11	...	...	...	1	12	13	...	...
Toothache...	...	2	2	...	...	...	...	26	26	...	...
Glossitis	...	...	...	...	...	...	...	6	6	...	...
Sore Throat	...	7	7	...	...	...	...	18	18	...	...
Tonsilitis	...	19	19	...	...	...	...	61	61	...	...
Hypertrophy of Uvula ...	...	...	...	...	...	...	...	2	2	...	...
Pharyngitis	...	10	10	...	...	1	...	31	31	...	1
Gastritis	...	44	44	...	...	1	...	145	145	...	1
Ulceration of Stomach ...	...	...	...	...	...	...	...	1	1	...	...
Dilatation of Stomach ...	...	1	1	...	...	...	...	...	...	...	...
Indigestion	...	62	62	...	...	...	1	345	346	...	1
Gastralgia...	...	3	3	...	...	1	...	27	27	...	...
Enteritis	...	19	19	...	...	...	...	92	92	3	...
Appendicitis	...	1	1	...	...	...	...	...	...	...	...
Colitis	...	16	16	...	...	...	...	31	31	2	1
Hernia, umbilical... ...	...	...	...	...	...	...	...	2	2	...	...
,, Inguinal	...	1	1	...	...	...	...	28	28	...	...
Intestinal Obstruction ...	...	1	1	...	...	...	1	...	1	1	...
Diarrhœa	...	47	47	...	...	...	8	656	664	11	1
Constipation	...	5	5	...	...	...	...	1,886	1,886	...	1
Colic	..	6	6	...	1	...	...	210	210	...	2
Dilatation of Intestines ...	...	...	...	...	...	...	...	1	1	...	...
Inflammation of Gall Bladder	...	2	2	...	...	...	...	...	...	...	...
Fistula in Ano	...	...	...	...	...	...	...	1	1	...	...
Piles	...	8	8	...	..	...	2	50	52	1	1
Prolapse of rectum ...	...	...	...	...	...	...	...	2	2	...	...
Hepatitis	...	5	5	...	1	1	...	15	15	1	...
Congestion of Liver ...	...	11	11	...	...	...	...	5	5	...	...
Jaundice	...	1	1	...	...	...	...	1	1	...	...
Peritonitis	...	...	...	...	...	...	...	7	7	3	...
Dropsy	...	...	...	...	...	...	...	2	2	...	...
Ischio-Rectal Abscess ...	...	1	1	...	...	...	...	2	2	...	...
Parotitis	...	...	...	...	...	...	...	5	5	...	...
Fissure of the Anus ...	...	...	...	...	...	...	...	2	2	...	...
Carried forward ...											

Return of Diseases and Deaths (Out-Patients) for the Year 1913—*continued.*

DISEASES.	EUROPEANS. Remained at end of 1912.	EUROPEANS. Yearly Total. Admissions.	EUROPEANS. Yearly Total. Total Cases Treated.	EUROPEANS. Yearly Total. Deaths.	EUROPEANS. Yearly Total. Invalids.	EUROPEANS. Remaining on 31st Dec., 1913.	NATIVES. Remained at end of 1912.	NATIVES. Yearly Total. Admissions.	NATIVES. Yearly Total. Total Cases Treated.	NATIVES. Yearly Total. Deaths.	NATIVES. Remaining on 31st Dec., 1913.
Brought forward ...											
Diseases of the Lymphatic System :—											
Splenitis	...	1	1	...	...	...	...	8	8	...	1
Inflam. of lymphatic gland	...	7	7	...	...	...	4	112	116	...	1
Suppuration ,, ,,	..	1	1	...	...	...	...	11	11	...	1
Lymphangitis	...	6	6	...	...	...	...	26	26	...	...
Elephantiasis	...	...	...	...	...	...	...	9	9	...	...
Lymphangiectasis ...	...	...	...	...	...	...	...	1	1	...	...
Diseases of the Thyroid Gland :—											
Goitre	...	...	...	...	...	...	...	3	3	...	1
Diseases of the Urinary System :—											
Nephritis, acute	...	...	...	...	...	...	...	9	9	2	...
Pyonephrosis	...	...	...	...	...	...	...	1	1	...	...
Nephralgia	...	...	...	...	...	...	...	2	2	...	...
Renal Colic	...	...	...	...	...	...	...	2	2	...	...
Stricture	...	...	...	...	...	...	...	13	13	...	...
Inflammation of Bladder...	...	4	4	...	1	...	...	19	19	1	...
Calculus Bladder	...	1	1	...	...	...	...	1	1	...	...
Retention of Urine ...	...	...	...	...	...	...	...	1	1	...	...
Hæmaturia	...	...	...	...	...	...	...	2	2	...	...
Phosphaturia	...	1	1	...	...	...	...	...	...	...	...
Œdema of Scrotum ...	...	...	...	...	...	...	...	1	1	...	...
Diseases of the Generative System :—											
Urethritis...	...	1	1	...	...	...	...	21	21	...	1
Prostatitis...	...	1	1	...	1	...	...	1	1	...	...
Abscess of Prostate ...	...	1	1	...	...	...	...	...	...	...	...
Phimosis	...	2	2	...	...	...	...	18	18	...	...
Paraphimosis	...	1	1	...	...	...	...	2	2	...	...
Balanitis	...	1	1	...	...	...	...	...	...	...	...
Ulcer of penis	...	...	...	...	...	...	...	20	20	...	4
Soft Chancre	...	1	1	...	...	1	5	49	54	...	1
Hydrocele...	...	2	2	...	...	...	1	30	31	...	1
Hydrocele of Cord ...	...	...	...	...	...	...	...	2	2	...	...
Varicocele...	...	...	...	...	...	...	...	3	3	...	...
Orchitis	...	2	2	...	...	...	1	59	60	...	2
Epididymitis	...	1	1	...	...	...	...	4	4	...	...
Inflammation of Ovary ...	...	...	...	...	...	...	...	2	2	...	...
Prolapsed Uterus... ...	...	...	...	...	...	...	...	1	1	...	...
Inflammation of Vagina...	...	...	...	...	...	...	...	1	1	...	...
Salpingitis	...	1	1	...	...	...	...	...	...	...	...
Dysmenorrhœa	...	...	...	...	...	...	...	5	5	...	2
Menorrhagia	...	...	...	...	...	...	...	6	6	...	...
Leucorrhœa	...	...	...	...	...	...	..	2	2	...	...
Metrorrhagia	...	...	...	...	...	...	...	1	1	...	...
Affections connected with Pregnancy :—											
Vomiting	...	...	...	...	...	...	...	1	1	...	...
Carried forward ...											

Return of Diseases and Deaths (Out-Patients) for the Year 1913—*continued.*

DISEASES.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Brought forward ...											
Affections connected with Parturition :—											
Retained placenta ...	...	...	...	...	...	...	...	1	1	...	...
Affections consequent on Parturition :—											
Mastitis	...	...	...	...	...	...	...	3	3	...	...
Diseases of the Female Breast :—											
Suppuration	...	...	...	...	...	...	...	2	2	...	...
Diseases of the Organs of Locomotion :—											
Osteitis	...	...	...	...	...	...	...	11	11	...	...
Periostitis	...	4	4	...	...	...	1	24	25	...	...
Spinal Curvature	...	...	...	...	...	...	...	1	1	...	...
Caries	...	...	...	...	...	...	...	2	2	...	1
Necrosis	...	...	...	...	...	...	...	2	2	...	...
Arthritis	...	2	2	...	...	...	...	67	67	...	2
Synovitis	...	9	9	...	...	...	6	154	160	...	1
Ankylosis	...	...	...	...	...	...	...	1	1	...	...
Hip Joint Disease (Tubercular)	...	...	...	...	...	...	...	1	1	...	1
Myositis	...	...	...	...	...	...	...	67	67	...	1
Myalgia	...	48	48	...	...	...	9	1051	1060	...	11
Thecal Abscess	...	...	...	...	...	...	...	1	1	...	...
Bursitis	...	2	2	...	...	...	...	13	13	...	...
Ainhum	...	...	...	...	...	...	1	8	9	...	1
Flat Foot	...	...	...	...	...	...	...	1	1	...	...
Ostalgia	...	...	...	...	...	...	...	4	4	...	...
Diseases of the Connective Tissues :—											
Inflammation	...	11	11	...	...	...	2	209	211	...	5
Abscess	...	12	12	...	...	1	5	392	397	1	8
Œdema	...	...	...	...	...	...	1	24	25	...	4
Diseases of the Skin :—											
Erythema	...	1	1	...	...	...	...	5	5	...	...
Urticaria	...	4	4	...	...	...	...	22	22	...	...
Eczema	...	9	9	...	...	...	...	55	55	...	...
Impetigo Contagiosa ...	...	...	...	...	...	...	1	36	37	...	...
Boil	1	38	39	...	1	...	5	157	162	...	...
Herpes	...	3	3	...	...	...	...	28	28	...	1
Psoriasis	...	2	2	...	...	1	...	2	2	...	...
Dermatitis	...	3	3	...	...	...	...	33	33	...	1
Corn	...	...	...	...	...	...	...	3	3	...	...
Seborrhœa...	...	1	1	...	...	...	1	1	2	...	...
Sebaceous Cyst	...	...	...	...	...	...	...	1	1	...	...
Acne	...	...	...	...	...	...	...	3	3	...	...
Prickly Heat	...	11	11	...	...	...	...	...	...	...	...
Onychia	...	3	3	...	...	...	...	1	1	...	...
Whitlow	...	2	2	...	...	...	1	61	62	...	1
Carried forward ...											

RETURN OF DISEASES AND DEATHS (OUT-PATIENTS) FOR THE YEAR 1913—*continued.*

DISEASES.	EUROPEANS.						NATIVES.				
	Remained end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Brought forward ...											
DISEASES OF THE SKIN :—*cntd.*											
Ulcer	...	2	2	...	...	...	37	978	1,015	1	48
Wart	...	4	4	...	...	...	...	4	4	...	...
Carbuncle	...	1	1	...	...	...	...	1	1	...	...
Pityriasis	...	...	...	...	...	..	...	2	2	...	...
Lupus Erythematosus ...	...	...	...	...	...	...	...	1	1	...	...
,, Vulgaris	...	...	...	...	...	...	...	1	1	...	...
Drowning	...	...	...	...	...	...	...	1	1	1	...
TOTALS ...	9	1,327	1,336	4	26	23	1,037	22,348	23,385	318	1,048

STATION.	EUROPEANS.						NATIVES.				
	Remained at end of 1912.	Yearly Total.				Remaining on 31st Dec., 1913.	Remained at end of 1912.	Yearly Total.			Remaining on 31st Dec., 1913.
		Admissions.	Total Cases Treated.	Deaths.	Invalids.			Admissions.	Total Cases Treated.	Deaths.	
Zungeru	1	81	82	...	2	...	8	1,354	1,362	...	13
Lokoja	1	108	109	...	2	...	38	2,130	2,168	12	26
Abinsi	...	16	16	...	...	...	10	545	555	3	27
Ankpa	...	11	11	...	...	...	26	1,226	1,252	47	3
Baro	1	81	82	..	2	...	7	478	485	3	8
Bauchi	...	20	20	...	...	1	4	1,009	1,013	4	18
Birnin-Kebbi	...	10	10	...	...	...	5	793	798	5	10
Geidam	...	34	34	...	...	5	12	898	910	8	18
Ibi	...	24	24	...	...	1	...	458	458	4	12
Ilorin	3	34	37	...	3	2	17	1,137	1,154	1	3
Jebba	...	60	60	...	2	...	17	432	449	4	2
Kabba	...	1	1	...	...	...	...	334	334	1	9
Kaduna	...	92	92	...	...	...	19	1,332	1,351	3	3
Kano	...	167	167	1	3	1	19	1,485	1,504	16	14
Katagum	...	11	11	...	...	...	...	451	451	2	4
Katsena	...	12	12	...	...	...	...	287	287	9	10
Kontagora	...	13	13	...	...	...	3	407	410	...	2
Maiduguri	...	8	8	...	...	2	654	1,211	1,865	123	686
Minna	...	79	79	...	...	...	4	605	609	1	3
Nafada	...	10	10	...	...	...	3	638	541	2	11
Naraguta	1	140	141	2	4	3	4	625	629	37	8
Offa	...	41	41	...	...	1	7	629	636	2	4
Railhead	...	33	33	...	...	...	...	815	815	21	5
Sokoto	...	16	16	...	...	1	138	861	999	2	122
Womba	...	31	31	...	3	...	6	642	648	5	12
Yola	1	32	33	...	...	1	9	1,164	1,173	3	1
Zaria	1	162	163	1	5	5	27	402	429	...	14
TOTALS	9	1,327	1,336	4	26	23	1.037	22,348	22,385	318	1,048

SANITATION.

(A.) GENERAL REVIEW OF WORK DONE, LAWS PASSED, AND PROGRESS MADE.

(I.)—ADMINISTRATIVE.

During the year the activities of the sanitary officers were almost entirely directed to the country served by the railway system and, in a minor degree, by the navigable rivers. The effect of railway extension was increasingly followed by the influx of unofficial Europeans and of non-European aliens; new trading firms kept establishing themselves; established firms kept adding to the number of their branches; and the non-official materially exceeded the official European population. The approach of amalgamation adumbrated the transfer of the local and the construction of the central capital at a spot on the railway further north than Zungeru; and frequent observation of likely ground for this purpose was of paramount importance. Throughout the greater part of the year, one or other of the sanitary officers was working single handed; as the condition of the general medical roster did not permit the seconding of a medical officer to perform the duties of a sanitary officer absent on leave; and cross-country tours away from the railway had to be reluctantly abandoned.

The provinces dealt with were Kano, Zaria, Niger, Bauchi, Bassa, Ilorin and Kabba. Circumstances calling for the attention of the sanitary officers in other provinces were dealt with by the local medical officers in correspondence with them.

KADUNA.

At Kaduna, which, as before reported, is situated on the river of the same name at the spot where the railway crosses, is fifty miles below Zaria, the headquarters of the Northern Nigeria Regiment and of the first battalion thereof, had been established at the end of 1912. This transfer had been effected for two reasons; in the first place in order that the congestion at Zungeru might be relieved, and in the second in order that the general conditions of the region from the residential point of view might be accurately observed during all seasons of the year.

Early in January, His Excellency appointed a committee, whose instructions were to examine and report upon the country on both sides of the river Kaduna from the neighbourhood of Zungeru to a point some dozen miles or so north of Kaduna; with a view to finding a desirable site which might be suitable for a new local capital and possibly for a central capital as well.

The committee found on investigation that there was no site between the region around Zungeru and that around Kaduna which possessed any material advantage over Zungeru itself. This conclusion narrowed the area to be considered to the neighbourhood of Kaduna. Finally, two alternative sites were selected for the consideration of His Excellency, who visited and went carefully over them in person. One of the sites was over ten miles up the river north-north-east of Kaduna, and the other was from two to three miles up the river from the Kaduna bridge. His Excellency, on the whole, preferred the latter site; but directed that both sites should be kept under constant observation until the rains should have finished with the ending of October. This was accordingly done: a half company of soldiers under a European officer was encamped on the central part of the second site; both sites were frequently visited by the local Political, Medical and Military Officers; in the middle of the rains, the Sanitary Officer went into residence during two periods of a fortnight each; the Director of Surveys, who had made his camp on the north-bank portion of the second site in the days of railway construction, was called to counsel; and the Director of Surveys and the Senior Sanitary Officer went into residence together for a week at the end of the rains. The principal Medical Officer made a special visit to the region during the rains.

The result of all this observation was that the second site—that nearest Kaduna—was found to be the better one; but the reservation was made that the portion of it south of the river should be entirely abandoned in favour of the north-bank portion, which had been found to be infinitely more desirable in every way.

On the cessation of the rains, His Excellency, attended by the Principal Medical Officers of Northern and Southern Nigeria respectively, the Commandant, the Director of Works and Railways, the Director of Public Works, Southern Nigeria, and other representative officers, civil and military, went over the ground; and he and his entourage concluded unanimously that the site was an excellent one.

Taking every consideration into account, apart altogether from the central position which so strongly recommends it, it would be difficult in the Northern Provinces to find a better site for a capital: it is over two thousand feet above sea level; it enjoys a dry atmosphere—a most important point in the Tropics—and the nights feel cool during by far the greater part of the year; most of the soil is good and suitable for gardens and plantations; it commands an excellent water-supply from the river Kaduna, and the proposed residential portion is at a safe distance from the river itself; it has always been used as a cattle refuge during the rains, which gives promise of a fresh milk supply in place of the tinned article which is the only kind obtainable in all other West African capitals; and the Europeans who have lived there maintain that there are more days in the year when life is really worth living than is the case in most other parts of the country known to them.

It is true that, within the Northern Provinces, it is possible to find sites at a higher elevation—over three thousand feet; but elevation is not everything: the nearest approach to a white man's country—although too remote and peripheral to be considered as the site of a capital—in the entire region is Bornu; and Bornu is at a much lower elevation than that of the proposed site. In tropical regions, Europeans are apt to direct their attention and preference too exclusively to coolness. Now railways in the Tropics are apt to make the cool climate of elevated regions a serious danger to health. In the absence of railways, the journey from low to high country is necessarily effected slowly and the system thus is enabled gradually to adapt itself to the changed conditions but, when the change is effected by rail, the shock is apt to be too great—much the same as indulgence in a cold bath, which is well known to be dangerous to most Europeans in the Tropics. Now the central capital has to serve the residents of the steamy provinces of the South as well as those of the upland provinces of the North; in this country, where the official tour of service only lasts a year, there is no time to dawdle by the way for reasons of health or any other reasons; many people will have to make repeated rapid journeys to the capital, and, under all the circumstances, the site selected for the purpose seems to constitute the happy medium—high enough and sufficiently far inland to afford one of the best average climates in the country, and not so elevated as to render sudden coming and going dangerous to those who take reasonable care of themselves. Again, many men, towards the end of the regulation tour of service, are found to be suffering from valvular incompetence due to dilated heart. This affection disappears after the tonic effect of a few months in the bracing climate of Europe. But for men in this condition suddenly to make the journey from a steamy and relaxing, to a dry cool climate, and an ascent of over three thousand feet in forty-eight hours, is exceedingly dangerous.

At the Kaduna Bridge, where the military are at present accommodated in temporary quarters on the South bank from two to three miles from the site of the new capital, it is proposed to construct a new railway headquarters. There is ample suitable ground for this limited purpose.

Before leaving the subject, it should be stated that the selected site of the new capital contains ample good ground for expansion, and is capable of accommodating a city larger than is ever likely to exist in any part of Africa.

KANO.

Since the completion of the railway to Kano, the European settlement, close to the railway station and midway between the city wall and the Political Station, has expanded beyond all expectation. It is estimated that, by March, 1915, the European population of the trading quarter alone will have exceeded one hundred. The vacant European trading plots are being rapidly taken up; and a pleasing feature of the situation is to be found in the intention of some members of the trading community to take up residential sites away from their business premises. This will lessen the congestion which has already shown itself on the trading sites, and will greatly safeguard the health of the Europeans concerned.

Constant vigilance is called for in the sanitation of the trading settlement on account of the large numbers of natives with their beasts of burden and produce who congregate there daily. Fortunately, the soil is light, dry and porous, and lends itself readily to the disposal of organic filth and refuse by burial.

A non-European alien trading quarter with it own railway sidings has been laid out at an adequate distance from the European one, and there also the holdings are being rapidly taken up.

Petty native traders will do their business in the market which has been laid out outside of the native quarter of the township. The native quarter, like the non-European alien quarter, has its boundary fixed at an adequate distance from that of the European trading quarter.

The end of the year found Kano Station well in hand; and, given the constant attention which it will always call for, there is no reason why it should not always be a model settlement for this part of Africa.

Changes were foreshadowed in the Political Station in the shape of rearrangement and further building; but such changes will more properly concern 1914 than the past year.

A dam was constructed to increase the water supply; but it will probably be disestablished what time the scheme of a piped supply from the river Shalawa shall have matured.

The native city remains a specimen of a large native town of which the Administration, both European and native, may well be proud. In the event of water being conducted from the river Shalawa, it is intended that the native city shall get its supply therefrom. This will mean the successful solution of the most difficult sanitary problem of the city: to wit, the proximity of wells to *salgas*.

Owing to the scanty rainfall, the water-problem had, by the end of the year, become a very serious one; many of the wells had run dry; and people who were the fortunate possessors of non-failing wells were, in some instances, actually selling water by the pot. Of course this is not, in itself, a reason for panic; for the same thing was happening during the summer in some parts of rural Britain: but it gives the observer food for thought in a region which betrays unpleasant signs of progressive desiccation.

ZARIA.

As at Kano, so at Zaria, but in less degree, the European trading quarter expanded greatly and developed sanitary requirements of the same nature.

The end of the year found the final lay-out of Zaria township still engaging the attention of the Administration.

A piped water-supply pumped to and distributed from elevated tanks having been established by the railway for its needs, a certain amount was conducted to the township and supplied to Europeans from stand pipes; but the meagre supply had still to be supplemented from wells.

Zaria remains the junction at which passengers break their journey to the mining area at and near the Bauchi plateau. The fact that a private firm has opened a restaurant on Zaria railway station will give some indication of the increase of passenger traffic. The importance and increase of the place are likely to be permanently further augmented by the construction of a road for motor transport to feed the railway. This road will pass through a portion of the Katsina emirate and on towards Sokoto.

The native city was undergoing a steady improvement during the year. Early in the year the main thoroughfare approaching the Kano gate of the city had been made broad and regular and had been continued inside of the wall right on to the market. Of course, on reaching the inhabited part of the city, it had necessarily narrowed; but the improvement of the thoroughfare itself and of its surroundings had transformed the quarter of the city served by it. At the beginning of the year also a fine new market, on of the finest in the country, had been completed on the site of the old one and its surroundings were being steadily improved; while slaughtering of animals in the neighbourhood of the market had been discontinued and had come to be conducted at a spot without the city wall.

A fine new native gaol had been planned on a rising ground at the clear area of the city some short distance from the Kano gate, and the end of the year found it in course of erection and part of it already occupied.

MINNA.

On Minna Hill and on the sloping ground between its base and the railway station, the railway authorities built extensively during the year; and the end of the year saw all the local members of the European railway staff housed in permanent quarters.

The extending of quarters for the native employees was being carried out; but the destinies of the place remained rather nebulous. *Inter alia*, it was decided that Minna should no longer remain the capital of the Niger Province; but that Bida should regain this position. This adumbrated the transfer of the Police from Minna to Bida and, coupled with the possibility of the reduction of the local railway population, pointed to diminishing importance. But it must always derive some importance from being the junction of the Lagos with the old Baro-Kano section of the railway.

In the event of Minna not eventually decreasing in population, the meagre water supply will render imperative the scheme, mentioned by the Principal Medical Officer, of laying on a piped supply from the river Bako.

The neighbourhood of the railway station has a large nightly native population, on account of passenger trains stabling there for the night.

BARO.

The diminishing importance and the shrinking of the population of Baro, reported in the last annual report, continued during the year; and this tendency was exaggerated by the low condition of the Niger, the result of the meagre rainfall.

The swamp was really effectively tackled, at last, by the Assistant Locomotive Superintendent, who devised a cunning syphon arrangement which, at low water level, effectively drained the lower aspect into the Niger. In connection with the upper aspect, where the marsh water stands at two levels, arrangements were made to cut a drain from the higher to the lower level.

Since the end of the days of railway construction on the old Baro-Kano System, the clearing of the Baro during the rains has been a very difficult problem. In the construction days, there was abundant labour on the spot and large gangs of labourers could often be requisitioned to effect extensive clearing. Since then, although the area is sufficient for a large settlement and must remain so, on account of the distribution of the houses, it has become a small place: in short, it is a village with the sanitary requirements of a town.

It will probably, however, regain much of its lost importance and size. Just as the trade along the old caravan roads continues to increase in spite of the advent of the railways, it is reasonable to suppose that the same thing will happen on the Niger. If this event be realised, the sanitary problem will be materially simplified.

Tsetse flies continue to infest the place; but, fortunately, they seem to confine their deadly activities to the lower animals.

Both mosquitoes and flies are a chronic plague in the horseshoe.

ZUNGERU.

The sanitary condition of Zungeru is satisfactory. The absence of most of the soldiers during the year left a large area of what had been military lines a vacant space. This is always a benefit in a country such as this, where natives inhabit mud or grass nuts on unpaved ground. With the greatest care exercised, the ground becomes fouled and soured after prolonged occupation; and the occasional evacuation and leaving vacant of such ground is an unmixed blessing.

The departure of the soldiers was followed by a progressive exodus of many of their hangers-on in the native quarter of the cantonment, which lessened the conjestion there; and the staff of sanitary labourers not having been reduced in direct proportion to the decreased population, it was possible to make sanitary activities go with a swing which had been impossible before.

The Dago water supply called for close watching after the scanty rainfall.

Touching this question of rainfall, it is interesting to note, as can be seen from the table furnished by the Principal Medical Officer, that, although the rainfall at Zungeru was specially scanty in both 1912 and 1913, it was materially greater than what is officially accepted as the average rainfall for Greenwich and the Eastern Counties respectively. But here the rainfall is not fairly evenly distributed through the year as it is at home; a steady dripping, wetting rain for a day on end is a rare occurrence at any time, except in the South rain, as a rule, comes on with a tornado; a relatively heavy fall takes place in a very short time—from twenty minutes to three-quarters of an hour, as a rule; and most of it makes its way to the water-courses and is carried away, before an adequate amount can be soaked up by the ground; and the underground reserve is thus starved. When water does lie in shallow depressions, much the greater part of it is lost by evaporation before it can percolate. Over the greater part of the country, during more than six months on end, no rain falls at all: during that time the atmosphere is dry; the solar heat is great; and the vigorous, dry Harmattan, which sweeps over the land from the desert, completes the desiccating process.

This explains why, although the country is an agricultural one and more than half of it emphatically a cattle one, the number of cattle is much less than that of England and Wales, which together contain less than a fourth of its area! and why, in Bornu, an old Mohammedan Sultanate, with its own civilisation, the people smother themselves in scent in order that they may thus disguise the offensive odour of their unwashed bodies.

Remembering all this, it is not surprising that cutaneous affections are common everywhere, that verminous persons are numerous, and that large numbers of the ruck of the people philosophically regard such conditions as their natural portion.

JEBBA, ILORIN AND OFFA.

Those three places received considerable attention during the year. They are all south of the Niger, and, running south in the order given, they represent a chain of Medical Officers' stations on the railway from where it enters the Northern Provinces near Offa on the south to where it crosses the Niger at Jebba. Whenever Yellow Fever was reported from the Southern Provinces, the Medical Officers at those three stations examined regularly all the people on the passenger trains coming from the south. It still remains true that no case of Yellow Fever is known ever to have entered, or to have existed in, the Northern Provinces.

Jebba, at one time the capital of Northern Nigeria, is now merely a railway settlement. It is one of the many places in the country which may eventually become important, but whose future is at present nebulous. Arrangements were made at the end of the year to take its skeleton lay-out systematically in hand; in order that its expansion might be able to proceed in an orderly manner at any time. Towards the end of the year, the greater part of its normal water-supply had dried up, and the people had to resort to the river, the water from which is neither so pure nor so inviting as is the spring water.

Under the influence of the Medical Officer, who also was the local Magistrate, the leading members of the native community developed a praiseworthy zeal in sanitary matters which resulted in very substantial improvement.

Ilorin is the capital of the Yoruba Province of the same name. Early in the year, the European railway officials evacuated their commodious houses on what is known as the Square Mile, only retaining one house. This made it possible to transfer the community of the Political Station three miles away to the Square Mile, and thus exchange their superannuated quarters for good new ones. The Political Station is now occupied by a temporary military garrison: temporary; because Ilorin is not now regarded as a permanent military post.

The Square Mile is an area to the east of the railway line, having at its front border a row of European trader's houses, shops, stores, and railway sidings. Its situation is high and good, and is well removed from the large native city across the valley of the river which runs parallel with the west of the line.

The Square Mile possesses many advantages for a station site, and the settlement will eventually be at once attractive and sanitary. It is sanitary now; but will not be attractive until lapse of time shall have permitted plantations to cover the open area.

The large native city is rather squalid, as Yoruba towns are apt to be, on account of the Yorubas being indifferent thatchers; but many of the thoroughfares are broad and spacious, and large open spaces are numerous, while the more congested quarters are from time to time purified by fire. Considerable sanitary improvement is being effected by inducing the people to safeguard the tops of their wells by parapets and to clear the approaches thereto.

Offa is a large railway settlement with extensive workshops. The European quarter is well situated on rising ground at the eastern margin of the valley along which the railway runs. The Europeans are well housed in substantial permanent buildings.

The non-European staff is located to the west of the line, on the opposite side of the valley to and well away from the European quarter. The members of it are in occupation of temporary thatched huts; but a project was formulated during the year for eventually accommodating them in permanent quarters.

The sanitation of the entire railway settlement is good. The problem of how to secure an adequate water-supply at Offa has always been the most important one, and it became more pressing during the year. At the end of the year, although much experimenting had been done and several schemes were under consideration, finality had not been reached. The needs of the locomotives and of the workshops call for, at least, as much water as was formerly required by the entire native town, which is not a small one.

The native town is a straggling, sordid one. The people are and always have been most careless with their wells, not making the faintest effort to safeguard them in any way. Up till recently, the entire energies of the local Medical Officer have been observed by the necessities of the large railway staff and by the sanitary requirements of the settlement; while no Political Officer has been in permanent residence. At the end of the year, the Resident and Medical Officer had arranged to take the native town seriously in hand.

LOKOJA.

The future of Lokoja, from the sanitary point of view, was made much more promising than it had been till then, when His Excellency, the Governor, intimated his decision that all future extensions of Lokoja native town should take place across the river Mimi and that existing Native householders should be encouraged to move thither.

Across the Mimi there is an excellent site, close to the river, well adapted for the lay-out of a new town. The proximity of the site to the river Niger is a most important feature from the point of view of the numerous amphibious persons in Lokoja who have always been engaged in riverain trade and transport

Although the European population of the place has decreased since the advent of the railways, and its seems on the surface as if the trade has diminished, it is really very doubtful if the native trade has diminished at all. The number of petty traders who have always used canoes for transport, and who regard the water-ways as their traditional highways, is very great; and, given the continued existence of such a population, there must always be a trading metropolis at the influence of two great rivers like the Niger and the Benue.

Lokoja, therefore, must always loom large in the sanitary horizon of the country: apart altogether from the question of the invasion of the northern Provinces by Yellow Fever, it is the first objective of nearly all travellers and traders who enter them by water, and it is, therefore, the primary filter and the spot where imported disease must be stamped out.

It lies between the Pagan Provinces of Kabba and Bassa, both of which were traversed by the Sanitary Officer during the year. Many of the Pagans of those Provinces are known to suffer severely in health from harbouring entozoa, one of the commonest affections is Ankylostomiasis. At present all that can be done in the way of dealing with those and other endemic and epidemic diseases is done by the local Medical Officers stationed at Lokoja, Ankpa and occasionally at Kabba treating all the natives so suffering whom they can get in touch with. The day for extensively applying public health methods to those Provinces, as distinguished from the personal practice of the general practitioner applied to individuals, is not yet.

In those two Provinces, with the exception of a few localities of limited extent, medical activity has to be directed to the individual rather than the mass. But when the time shall have come for the extensive application of public health methods in those Provinces it is from Lokoja that they will have to be directed.

The end of the year saw the Patti water supply laid on by stand-pipes throughout the Political Station. Patti water was obtainable by all Europeans, soldiers, police, coast clerks and artizans and their dependents. It is said that the supply can be more than doubled if need be, and there does not seem to be any reason to doubt this.

The clearing difficulty was still a formidable one during the rains, but during the dry weather the station was maintained in admirable order.

Mosquitoes were less plentiful in the station, with the exception, strangely enough, of the hospital ridge. The mosquitoes there, however, were rarely Anopheles. When the gradual lining of all the watercourses with laterite blocks shall have been completed, this state of affairs will be great in part remedied.

Tsetse flies are said to be more plentiful than formerly. No evidence based on accurate observation is forthcoming in support of this general statement. It is true that the mortality, from Trypanosomiasis, in horses has markedly increased in recent years; but it is no greater than, if as great as, it was in the years 1900–1911. The many real sanitary improvements which have been effected since 1902, and which have completely transformed the place, are inimical to the existence of Tsetse flies, so far as their habits and life history are known. It is quite natural for owners of horses who are smarting from the continual loss of favourite animals to maintain that the "Tsetse plague is getting worse instead of better"; but this is not evidence. A much more likely explanation is to be found in the greater security to life and property which the Administration has been progressively conferring on traders passing through Kabba and Bassa. Traders take large numbers of horses affected by Trypanosomiasis through both Kabba and Bassa, *en route* for the Southern Provinces, where they sell them for conversion into meat. Not many years ago such traders could not have traversed those Provinces safely. Now many of those sick horses pass through, or close into, Lokoja, thus more extensively infecting the existing Tsetse flies than was the case formerly.

The market was greatly improved during the year, and by the end of it all the booths and sheds had been roofed with corrugated iron.

Towards the end of the year, the Station Magistrate induced the butchers to adopt the principle of covering the meat exposed for sale by moveable screens of wire gauze; and this practice will be universal at Lokoja soon, if indeed it be not so already.

At the end of the year, the use of the *salga* had become practically universal in the compounds of the native town, and the arrangement was working well.

The question of satisfactory public conveniences for the large number of visitors to the market was still under consideration. As those people are mostly riverain, pontoon latrines moored off the river bank will probably be the eventual contrivance used.

The *dhubing* of the station is being steadily proceeded with by the Station Magistrate: and the extensive prison gardens and plantations behind the station serve, during the rains, to break the continuity of exuberant vegetation between Mount Patti and the horseshoe depression in which the station is situated.

The stations adverted to above are typical of the locations to which the attention of the Sanitary Officers was directed during the year.

THE RAILWAY SYSTEM.

As stated above, the stations on the railway, together with the country immediately served by it, almost entirely monopolised the attention of the Sanitary Officers during the year. It will be found that the same thing will be true of half of 1914.

The railway from Kano to Baro, from Minna to Offa, and from Zaria to Jos was repeatedly traversed and all the stations thereon were dealt with. But there was a certain amount of wasteful overlapping of activity; and too many persons were called, or called themselves to counsel. The result of this was that a good deal of confusion arose. A certain amount of this confusion was absolutely unavoidable; for it is quite impossible for a new railway—and a pioneer railway at that—to foretell accurately what its needs will eventually be at any given station.

His Excellency the Governor having observed this state of affairs, dealt with it systematically at the end of the year. He issued a definite order that the railway should be taken in hand in the following manner:—

1. That the Director of Surveys, the Chief Engineer of the Railway or his lieutenant, the Residents of the localities respectively concerned, and the Senior Sanitary Officer should systematically visit every station throughout the railway system, whether or no any actual activity was contemplated thereat, and arrange the lay-out of the station-yard and buildings, the railway area generally, the Traders' siding-plots, the European residential quarter, the non-European alien quarter and the native location.

2. That each station so visited should be set out by the Director of Surveys and a plan thereof prepared by him.

3. That any difference of opinion touching the lay-out as shown on the plan should be submitted to His Excellency.

4. That the plan, when finally signed by His Excellency, should become the Official one.

5. That such plan should be filed in the office of the Director of Surveys, and copies in the office of the Chief Engineer of the Railway.

When each station shall have been dealt with thus, it will require no attention again, so far as lay-out is concerned.

In August, a comprehensive scheme for the systematic sanitation of the entire railway within the confines of the Northern Provinces to take effect from the beginning of 1914, was agreed upon.

This scheme was drawn up by the Sanitary Officer, who was then in charge, after consultation with the Chief Engineer. All the local people concerned had been consulted before the scheme was arranged.

The main features of the scheme are :

1. The Railway System has been divided into three sections whose headquarters are at Jebba, at Minna and at Zaria respectively. To each section has been allocated a Sanitary Inspector, who will act under the directions of the Medical Officers stationed along his section.

2. The duties of the Sanitary Inspector will comprise the inspection of all stations on the section and supervision of sanitary labour whenever necessary. He will proceed on tour, under definite instructions from the Medical Officer at the headquarter station, and will report himself to the Medical Officer on arrival at a place where one is stationed. His daily work, together with his movements when travelling on inspection, shall be fully recorded in a diary which he will keep for the purpose.

3. At each main station on the respective sections there shall be an adequate gang of labourers and night-soil men : under one or two headmen, according to the number of men employed.

4. At each small wayside station there shall be one labourer for scavenging and latrine work.

5. During the rainy season—June to October—there shall be employed on each section a travelling gang of twenty labourers under a headman. It will be the duty of the travelling gang on each section to travel up and down the section, rendering assistance at each station where the exuberance of the vegetation may have become too great for the permanent local labour to cope with.

This arrangement is a very important step forward and will put the sanitation of all the railway stations on a satisfactory footing. The crowds of raw natives travelling by rail, render it imperative that the machinery for effecting clearing, scavenging and latrine work, be perpetually adequate.

It will be noted that the scheme sketched above involves the employment of English-speaking, English-writing Sanitary Inspectors and the question may arise: "why, if such men can be employed on the railway, can they not be employed in the Northern Provinces generally?" The answer to this question is very simple :—The railway is an alien institution, and will be so regarded by the indigenous natives for a long time to come; with the exceptions of natives passing through the stations, the people for whose needs its sanitary arrangements provide, are almost exclusively European or non-European aliens ; and railway sanitary activity does not touch the daily domestic life of the people, intimate or general, in any way whatever. It will be well if this be remembered; for, if it be, it may obviate much superfluous discussion later on.

The General Manager arranged to have some necessary reforms effected in the sanitary appointments of the passenger rolling stock.

Camps were set out, at a point between Kaduna and the river Romi, for the accommodation of the staff employed on the construction of the new railway from Port Harcourt.

LEGISLATION.

1. Gazette Extraordinary, No. 7 of 4.4.13, under the Infectious Diseases Proclamation, declared the native quarters at Zaria township, taken together to be a place where compulsory vaccination took effect.

2. Proclamation No. 7 of 1913 was: "A Proclamation to give effect to "the measures decided upon in the International Opium Convention signed "at the Hague on the 23rd day of January, 1912, and to regulate the "importation into and storage and disposal of Opium, Cocaine and similar "drugs in the Protectorate."

3. The Administration of Northern Nigeria became a party to the International Sanitary Convention signed at Paris in January, 1912.

4. His Excellency the Governor assented to the principle of all markets and caravansaries at new native towns being extra-mural.

PROGRESS MADE.

With the passing of the year under review, a notable epoch in the history of British West Africa was concluded: the Protectorate of Northern Nigeria, which had been proclaimed on the 1st of January, 1900, ceased to be a separate Dependency, and became "The Northern Provinces of Nigeria."

Under the circumstances, it is fitting that this part of the report should take the form of a brief review of the sanitary progress made during these fourteen eventful years.

When the Imperial flag supplanted the Domestic flag of the Royal Niger Company, effective occupation of the country was practicably confined to a few stations along the great rivers Niger and Benue. How the well-bred, civilised, Mohammedan Sultans and Emirs of the North regarded the European, at that time—they had some idea of him by rumour, and from the stories of their fathers who had entertained him—it is difficult to conceive: to portray it will be the pleasure and privilege of the future historian of Northern Nigeria. To have known this, together with any change of view evolved by more actual knowledge of the European and his methods, would have been most useful to those engaged in sanitary activity.

From the beginning, active sanitary measures were adopted at every place to which a Medical Officer was posted, the presence of soldiers—and therefore of people under discipline—at most occupied places giving preliminary assistance to such activity; and it is pleasing to be able to record here that most Political and many Military Officers have always taken an active interest in sanitary activity and progress, whether they have been in association with Medical Officers or no.

But, notwithstanding this, the first few years having been chiefly devoted to conquest, sanitary requirements were naturally, and necessarily had to be, regarded as of secondary importance. Nevertheless, sanitary activity followed the Northern Nigerian as closely as the construction of roads did the Roman conquests. Roads also followed in due course, and have since been ever becoming more widely extended; and they have ministered and are ministering almost as much to sanitary progress as to administration and trade. Nothing does more to safeguard travellers in a Sleeping Sickness region than the cutting of a broad open road across the Tsetse fly-belts.

Kabba, Bida, Ilorin and Kontagora were the early inland places occupied; they were all well in hand by the middle of 1901; and a certain amount of sanitary activity was taking shape by the end of that year, particularly at Ilorin, which had been effectively occupied since the days of the Royal Niger Company.

In the Autumn of 1901, Yola, at the top of the Northern Nigerian portion of the Benue, over 500 miles above the mouth of the river, was taken and a garrison was stationed there. It was some time, however, before some of the intermediate reaches had been finally pacified ; but since the Munchis were dealt with at the beginning of 1906, that fine river has been a safe highway for peaceful traffic, and slow but steady sanitary improvement has been going on at every place on its banks and neighbourhood which receives European attention.

Three stations on the Benue, namely Yola, Ibi and Abinsi, have Medical Officers posted to them ; and in recent years, those officers have been making their influence felt in a steadily increasing scale, in the direction of improving the sanitary condition of the native towns within reach of their stations.

Early in 1902, an expedition set out to Bauchi and on to Maiduguri in Bornu, the remnant returning to Lokoja via Yola and the Benue. Garrisons were dropped at Bauchi and at Maiduguri, each with a Medical Officer. Later, a Medical Officer was posted to Gujba, transferred later to Nafada where the emirate of Gombe marches with the Sultanate of Bornu ; and in 1906 a Medical Officer was posted to Geidam in the north-west of Bornu. The influence of those medical men, who were always cordially supported by the residents in charge, soon began to make itself felt ; Bauchi has for years been known as one of the model native towns ; Gombe and Nafada, each of them the capital of the emirate of the same name, are creditable ; while Maiduguri, the new capital of the Shehu of Bornu, and the new native town at Geidam, each with its extra-mural market and caravansary, are patterns of what towns in the North ought to be.

In the early part of 1902, the transfer of the capital from Jebba to Zungeru, some sixty or seventy miles up the river Kaduna from the Niger, was begun and carried through before the end of the year. This move was preparatory to the taking effective possession of Zaria, Kano, and Sokoto, including the emirates of Katsina and Gando. Zungeru—in 1902-3 its Cantonment Magistrate was a medical man—enjoyed well planned sanitary arrangements from the beginning ; and has, right up till now, enjoyed every sanitary advantage commensurate with the means available. About the time Zungeru was being built, the then Principal Medical Officer took Lokoja seriously in hand, and this movement resulted in the transformation of that station, which has been indicated in previous reports.

In 1902, a garrison was posted to Argungu, a little over fifty miles to the West of Sokoto.

At the beginning of 1903, with garrisons at Zungeru, Bauchi, Kontagora and Argungu, the ground had been prepared for the move on Zaria, Kano and Sokoto. By the middle of the year those places were firmly held ; and Hadeija and Katagum, between Kano and Bornu, were under the administration shortly thereafter. Medical Officers were posted to Zaria, Kano and Sokoto from the beginning ; one has been posted to Katagum and another to Birnin-Kebbi for a considerable number of years now ; and Katsina and Hadeija have intermittently enjoyed the services of resident Medical Officers. All of those places have afforded progressively increasing evidence of sanitary improvement effected by medical activity supported by Political persuasion.

The greater part of the Mohammedan North betrays evidence of sanitary activity radiating from the centres named.

The Emirs and Sarakuna of the North are—all things considered—very receptive of, and often unexpectedly sympathetic towards, sanitary representations, when the sanitarian approaches them tactfully through the proper political channels and does not understudy the proverbial " bull in a china shop." This is not altogether surprising when one remembers that centuries ago, Islam welcomed Jewish and Christian medical service ; and went on until there were numerous examples of accomplished Mohammedan medical practitioners.

It is not fair to compare the civilisation of this part of the world with that of Europe, at any part of its history: they are not parallel. It may be truthfully said, however, that the present day civilisation of the Hausa States is in no sense so high as was that of Southern Europe in the first half of the seventeenth century: yet, if a man were to promulgate the most startling scientific discovery, the long odds are that the native magnates, even if they had the power, would never dream of dealing with him as Galileo was dealt with in Italy in 1632. To leave the Mohammedan North and come South, nearly everywhere in Pagan country where sanitary progress is being made—and material progress is being made—it begins in isolated Mohammedan settlements and radiates outwards.

At Sokoto, Bornu, Hadeija and Bauchi, the manner in which the native rulers are tactfully inducing their people to accept more and more the principle of the segregation of Lepers is altogether admirable; while neighbouring rulers are only waiting until they think the time is ripe to follow the same policy.

The Emirs of Kano and Zaria, although they have quite enough for Natives to contend with in the crowds of aliens which the advent of the railway has brought around their city walls, contrive to devote a praiseworthy amount of their attention to sanitary progress. Remembering the facts stated above, and with recollections of sympathetic support unexpectedly received, the observer is apt to be rather impatient of the worn-out platitude that Islam is a solid wall against progress.

Apart altogether from the saving of time to the sanitary worker, and the larger amount of work which he can overtake in consequence, the advent of the railway has already made for sanitary progress and will go on doing so in increasing ways. Such building materials as iron and cement can be and are now, taken North to an extent which was out of the question before. This has a most important bearing on the housing of Europeans in the North, where, lacking such materials, it is most difficult to house them healthily on account of the ravages of the white ant.

It is now possible for an invalid to travel from Kano to England without fatigue, in a materially shorter time than, not long ago, it took him to make the fatiguing journey from Kano to the sea. This avoids a great loss of useful service; for officers may now be safely allowed to go on with their work for, it may be, months after, before the advent of the railway, they would have been invalided home in anticipation of their becoming unable to travel.

Probably the most valuable sanitary effect of the railway will be its educative one. The indigenous native is a most sceptical person; but, with him, "seeing is believing." And, when he sees the result of European knowledge bearing such tangible fruit as is shewn by the railway, he is more likely than he was to apply other European teaching, which he was able to practise himself with means at his disposal. If the hand-loom were introduced to the country it would tend in the same direction. The sanitary condition of the railway stations is another excellent educative influence when the attention of the native is invited to a comparison of the sanitary condition of a crowded railway station with that of many a busy market which he knows.

There is one direction in which the advent of the railway is likely to militate against the public health, if the mental soundness of the people be regarded as a most important element in the public health, as it ought to be. The locomotive is the most formidable weapon which has been directed against Native arts and handicrafts: they are almost certain to go out before it. Already one sees everywhere clothing made of Manchester cotton replacing the local material, just as in Britain tweed and serge are supplanting broadcloth; but, unfortunately, the comparison is not complete: for here it is not a case of one local manufacture giving place to another, but of the manufacturer being completely disestablished by the alien. In some places, it is possible to see a touching fight being put up against the invasion, in the shape of weavers having deserted the native yarn and weaving cloth with imported thread.

Outside of administration and the practice of law, which are necessarily restricted to a few, and the active pursuit of the art of war which has now been stopped, there can be no doubt the practice of native arts and crafts has been the principal quickening influence on the public minds.

Their extermination means, in the long run, mental degeneration. This is rather a melancholy reflection for the local student of public health : especially now when many thoughtful people are looking to the restoration of arts and handicrafts as the most hopeful means of stemming the tide of mental and consequent physical degeneration which seems to many to be menacing the public health of modern Europe.

The steady increase in vaccination is an index of the progress made in the fourteen years. The number of persons who submitted to vaccination in 1913 rose to 13,916 : and this number only touches the fringe of the population. The figure means a great deal more than it would in any other part of West Africa: it means the steady overcoming of prejudice ; for there can be no doubt that, at first, in the Mohammedan North the prejudice was very great.

In most other parts of West Africa, each section of the people can be treated as a separate entity. But the Mohammedan emirates of the North, up till after the Protectorate had been proclaimed, formed a loose confederation with the Sultan of Sokoto as their patriachal chief, and the potentates can still freely correspond with one another in writing and otherwise. They had only to agree among themselves to boycott vaccination, had they been wishful to reduce it to a matter of police, and therefore a dead letter, among their indirectly governed people : they have not done so ; nor do they betray any intention of doing so.

The most important step in sanitary progress of the year 1913, and a notable one in the fourteen year's history of Northern Nigeria, was taken by His Excellency the Governor at the end of the year, when he laid down once for all a well-defined principle of town-planing.

By the end of the year, the Department of Surveys had been organised, and was well on the way to being equipped with an adequate staff. Acting on the same lines as those described above in connection with railway stations, His Excellency ordered that, in future, all new townships should be set out by the Director of Surveys and the Senior Sanitary Officer acting in concert ; that the resulting plans should be submitted to him ; that they should have no effect, until what time they should have been signed by himself ; that the original plans and copies thereof should then be kept in the archives of the Survey Department ; that none other than a temporary right of occupancy should be granted to anybody anywhere until after His Excellency should have signed the plan of the place ; and that a copy of the authorised plan should be the only guide to those whose duty it was to allocate sites.

Finally—and, from the point of view of sanitary progress, this is probably the greatest advance which has yet been made—the public health regulations and principles, which had been laid down by the end of 1913, extended the same safeguards to the health of unofficial Europeans, whether independent or subordinate, as to that of Government Officials.

(II.) PREVENTIVE MEASURES.

MOSQUITO AND INSECT-BORNE DISEASES.

MALARIA.

During the year, 1,938 cases were treated against 2,014 in 1912 : a slight decrease. But 370 of the cases were European : an excess of 61 over 1912.

This recorded European increase is probably only an apparent one, and more likely than not indicates, as pointed out in the Report for 1912, the increasing disinclination of people to treat themselves for "goes of fever."

The slight decrease shown among the natives is probably fictitious. Europeans were less exposed to infection during the year and natives were more.

The scanty rainfall meant fewer general breeding grounds for mosquitoes ; but it meant also a greater storage of water in pots in native houses.

A novel ground for mosquito-breeding was observed during the year. An iron telegraph post had to be taken down at Minna : and the ground section was found to be full of water. Those telegraph posts are in three sections and the two lower ones are hollow. The third is represented by a small solid iron rod fitted into the apex of the upper tube. In the telegraph post in question, as is often the case, the terminal iron rod was absent ; thus permitting rain to get down the tube formed by the lower sections.

Throughout the year constant vigilance is directed towards the prevention of mosquito-breeding, and pools which cannot be drained are oiled or filled up. All the precautions mentioned in former reports are taken ; and, when any increase of mosquitoes is observed or suspected, the matter is probed to the bottom. The Principal Medical Officer mentions that :

> "during the past year 118 convictions were obtained in the various "courts for offences in contravention of the Sanitary Regulations";

but this figure, taking practically no account of Native Courts and their activities, only represents a moiety.

It must not be forgotten that the process of educating representative natives in matters pertaining to the public health is increasingly bearing fruit ; and that one of the consequences of this is that, among exclusively native communities, sanitary offenders in increasing numbers are haled before the Native Magistrates and dealt with in the Native Courts, or experience the direct discipline of their town or district headmen.

There are very official Europeans who are without so-called mosquito-proof rooms ; while the use of the mosquito-net is universal among Europeans of all classes—wandering Colonials from South Africa, Australia, etc., whom the mines have attracted hither, eventually adopting it in spite of their preliminary jeering thereat.

The use of the mosquito-net continues to spread among the natives, indigenous as well as alien.

The effect of general knowledge of mosquito-borne disease is seen in the fact that there can be no doubt that Malarial Fever is infinitely less common among old European residents than it used to be.

TRYPANOSOMIASIS.

Twelve cases of Sleeping Sickness, all of them in natives, were recorded as being treated during the year ; and four of them ended fatally.

The true incidence of the infection will not be even approximately known until what time the Pagan regions shall have been effectively opened up and their inhabitants induced to invoke medical aid.

The necessity of one Medical Officer or more being specially told off for Sleeping Sickness investigation remains a clamant one.

The precautions formerly reported continue to be taken; and, whenever a rumour of the existence of Sleeping Sickness is reported anywhere, the Medical Officer whose district is in touch with the locality takes the first opportunity of visiting it and of conveying to the people concerned some knowledge of the preventive methods to be practised.

This is good, so far as it goes; but no Medical Officer in charge of a district has the time to sit down long enough at the place concerned.

The new Eastern Railway from Port Harcourt, the construction of which has now begun, will probably on the whole tend to the decrease of Sleeping Sickness. After entering the Northern Provinces, it will pass through Sleeping Sickness areas south of the Benue, and north of it in Nassarawa and Niger. Many of the Pagans concerned will be employed as labourers and will come in contact with the Medical Officers on construction; they will lose much of their timidity and secretiveness and will come to appreciate European medical treatment; and the result will be enduring in their country, and will take the form of notifying the existence of the disease and increasingly taking the advice given.

YELLOW FEVER.

It is difficult to understand why Yellow Fever has never been known to exist in the Northern Provinces. It is true, as stated formerly, that in most parts of the country the temperature, at some time every year, falls low enough to be inconsistent with the continued existence of the parasite. But there is no known reason why it should not obtain a footing during the rains; there is plenty of water; there is the requisite mosquito; there is communication with known foci of the disease; and it would be fatuously untrue to profess that the precautions taken left no loophole for its entry.

The passengers on the train entering the country from the South are carefully inspected, as are also the river steamers and their passengers at Lokoja and Baro; but those precautions do not touch people entering the country by the caravan roads, or by canoes on the Niger. To attempt to examine the latter two classes exhaustively would be about as futile as it would be to set about making a clinical examination of the bees in a hive.

It is known that the Stegomyia Fasciata does not travel far; but natives coming by canoe or road from known foci sleep nightly in immediate contact with this domestic mosquito; and there must be some benevolent *tertium quid* which contends against Yellow Fever making its way inland.

FILARIASIS.

Although this infection, as formerly reported, is fairly prevalent, medical aid is rarely sought on account of it.

Its very rare occurrence among Europeans is evidence of the careful precautions taken against mosquitoes.

EPIDEMIC DISEASES.

Plague and Cholera continue, happily, to have no place in the medical history of the country; while Diphtheria is almost certainly not endemic, the very few known cases having probably been importations.

Hitherto, Enteric Fever has been generally regarded as an alien disease occasionally imported by Europeans; but the fact that 13 cases, one of which was fatal, were treated in natives during the year gives the uncomfortable impression that it is obtaining a footing in the country.

SMALL-POX.

This endemic disease continues to assume the epidemic form in numerous regions every dry season, and only a moiety of the cases of it comes to the knowledge of the European.

13,916 vaccinations, 11,801 of them actually observed by medical men to have been successful, were performed during the year: an excess over 1912, which itself was a great advance, of 3,804 actual vaccinations and of 3,131 successes.

This continues to speak eloquently of the growing native faith in the efficacy of the practice; while the large number of successful cases recorded in the hot, dry North maintains the reputation of powdered lymph.

DYSENTERY.

Dysentery annually assuming the epidemic form, so far as recorded cases were concerned, closely approached the figures of the previous year; but one of the 39 Europeans treated for the disease died, and there were 42 deaths among the natives against 32 in 1912.

The natives are continually being educated in the subject of water-borne disease, and being induced to safeguard their water supplies, and the practice of "cooking water" makes progress.

The precautions taken on behalf of Europeans and those which they are advised to take themselves have been described in former reports, and still hold good.

PAPATACI FEVER.

One European has been returned as having been treated for this disease.

PNEUMONIA AND INFLUENZA.

Two Europeans were treated for Pneumonia and nine for Influenza.

226 natives, 38 of whom died, were treated for one or other of these diseases.

For reasons which have been explained before, the two affections are written of here as if they were different names for the same thing: they almost certainly are among the natives, among whom also they are epidemic.

Little can be done in the prevention of this double-barrelled affection, until the time that something can be effected in the direction of lessening overcrowding.

PYREXIA OF UNCERTAIN ORIGIN.

Six Europeans and 82 natives were treated under this description, and the cases so described every year tend to show that there still remain some unclassified fevers to be investigated. It is always doubtful whether epidemic or endemic diseases be the proper head under which to group this.

ENDEMIC DISEASES.

BERI-BERI.

Nine cases were treated for Beri-Beri: one in a European and eight in natives; three of the latter ending fatally.

ANTHRAX.

One native case—it was not fatal—was so returned.

TETANUS.

Six natives, four of whom died, were treated for this disease, which there is grave reason to believe is commoner than is generally suspected.

RHEUMATISM.

This disease is common and widely distributed; but there is nothing material to be said about it, which has not appeared in previous reports.

LEPROSY.

This widely distributed disease continues to receive attention; but progress must necessarily be slow. If the people of a given district be coerced beyond what they will tolerate, their lepers will simply escape to other districts as they have done before. It is, therefore, wise to proceed cautiously, especially in the direction of segregation.

TUBERCULOSIS.

Two Europeans and twenty-one natives were treated for this disease and ten of the natives died.

It is rather distressing to note that the infection shows signs of obtaining a footing. Beyond isolating natives who appear with it in hospital or gaol, little can be done to stamp it out.

Europeans harbouring it are invalided; and certainly all non-European aliens so affected ought to be sent back to their own countries at once.

YAWS.

Of the 68 natives who were treated for this affection one died.

The patchy nature of its distribution was described in the last Report.

VENEREAL DISEASES.

There is not much to be said on the subject of those affections, which are so widely disseminated everywhere, except among the Pagans, and which work such havoc. Compulsory notification with forcible isolation is quite out of the question; and would remain so, even were the necessary machinery available. The Mohammedan natives would not tolerate this: they would probably leave the country first.

It must be remembered that, although many of those people have been accustomed to tolerate oppression for many generations, their tyrants have been wise tyrants: i.e. like all tyrants who have been successful in their tyranny, they have directed their oppression along those lines which experience had taught that the genius of the people would tolerate. Now domiciliary visitation and inquisition directed to their most intimate domestic relationships are things at which the people in question draw the line; and, if such tactics were practised, wholesale exodus would be the result.

The only remedy, in the way of prevention, is education public and private.

The better class natives do not need to be told that those affections follow the track of the trader: they have long known it; and many of them agree that on this account, it is wise to make markets and caravansaries extra-mural. As already stated, this principle is being applied, so far as possible, to all new native towns.

Anybody can see the wisdom of forbidding a sufferer from Small-pox to enter a town: and, at the worst, Small-pox only kills or maims. But the trader, who as often as not carries with him Venereal Disease like a concealed weapon, more often than not is permitted to enter a strange town without opposition and to spread living death, personal and hereditary, among sinful and innocent.

Here then is the first preventive measure: and it is one which can be steadily and substantially extended by the many tactful Political Officers throughout the country.

The next step is persistent education of the more influential natives on the secondary and remote effects of those affections, which are not any more understood here than they are in Europe. A considerable amount of work has been effected already; but, of course, only the fringe has been touched.

The next step is personal treatment of the sufferers by individuals who know the language and who have conciliated the confidence, and it may be the friendship, of the people. One of the greatest difficulties in taking this step is the lack of continuity of service and the shifting around of Medical Officers from station to station which are almost unavoidable. Nothing akin to the settled medical practitioner at home is known here: every Medical Officer being to all intents and purposes merely a locum tenens in the district in which he may be serving. When the condition of the medical roster shall have arrived—if it ever do arrive—at that state which may permit the same Officer to return repeatedly to the same station, some progress will be made. But the native is very conservative and very aloof and his confidence is not quickly gained.

Although no problem connected with the Public Health is more important than that which those diseases and their preventions present, it is no reason for panic or panicky legislation.

All steps taken must be carefully thought out and tactfully effected. To tackle the problem injudiciously would be worse than to leave it alone.

NEW GROWTHS.

Four natives were treated for Malignant New Growths (Carcinomata) and one of them died; but it still remains true that Malignant Disease of any type is very rarely noted.

HELMINTHIC DISEASES.

ANKYLOSTOMIASIS.

118 natives, six of whom died, were treated for this invasion. It was ascertained during the year that this affection was much more widely disseminated than had been formerly supposed. So far as the facts ascertained up to the end of the year go, it is most widely spread among the Pagans of the South. The accepted precautions are being taken so far as it is possible to apply them; but it must be remembered that many of the Pagans concerned have not yet passed the stage of tentative political handling.

The Principal Medical Officer has instructed the members of the Department to direct special attention to Helminthic Diseases. Accurate facts touching their incidence are increasingly forthcoming, and the problem of their serious reduction is being tackled.

BILHARZIA.

Only 16 cases of this affection, all of them native, were treated; but, as indicated in the last report, it is quite common in certain regions.

GUINEA WORM.

664 natives were treated for this very common affection. No opportunity is missed by the Medical and Sanitary Officers of giving instruction in how easily this parasite can be evaded. It is commonest among the travelling natives, for obvious reasons.

OTHER HELMINTHIC DISEASES.

The recorded cases of other Helminthic Diseases are stated in the tables.

Except at stations to which Medical Officers are posted, not much can be done in the way of prevention in the meantime.

The teaching functions exercised by the Sanitary Officers in the course of their tours have not yet extended to this distance.

There is a limit to what the native can absorb; and the same subject has generally to be gone over repeatedly before he really makes it his own.

(III.) GENERAL MEASURES.

SEWAGE DISPOSAL.

The methods followed in this direction have been fully described in former reports, and most things which could be said on the subject would be repetition.

An extension of activity in this direction was called for during the year by the rapid development of the trading quarters at Kano and at Zaria. Most of the ground at both places being suitable for the purpose, *salgas* are generally used by native servants and by the permanent native population: such *salgas* being generally accommodated within the confines of the compounds.

The multitude of daily native visitors to the trading areas have their requirements met by successions of narrow shallow trenches, enclosed by mats which are dug and covered up daily.

At the new capital, servants will, in most cases, be supplied with *salgas* within their masters' compounds, thus largely diminishing the objectionable procession of latrine buckets. The Europeans will be supplied with the usual earth closets. The ultimate method to be adopted in the Native Quarter and Soldiers' Lines is still under consideration. At the new capital, there can be no question of pollution of wells, as a piped water supply will be laid on.

To revert to Kano and Zaria, the ordure of the beasts of burden frequenting the trading areas is disposed of daily, partly by trenching and partly by burning.

The bucket and trenching system is used at the railway stations where the sanitary labour available, as described, ensures its effective working.

DISPOSAL OF REFUSE.

The rule remains that combustible refuse is burnt and non-combustible buried daily.

During the year, the number of incinerators was increased, and arrangements were made to go on adding to their number in 1914.

Bottles, tins, broken pots, etc., are particularly carefully collected and buried; and, when they are found lying about, the rule is to proceed against the occupier of the nearest compound.

Sanitary iron dust bins with covers are extensively supplied for the purpose of accommodating rubbish awaiting removal and burial; their issue is being extended; and the aim is to have every European's house supplied with one.

The progressive efficiency in dealing with refuse is demonstrated by the plague of flies tending to decrease in most large stations.

At many native towns, the inhabitants are showing evidence of being ashamed of dirty towns; and, as indicated earlier in this report, the Native Courts in many cases deal with the offenders on their own initiative.

At Lokoja and Baro much rubbish as well as night-soil is still disposed of in the river; but it is first of all taken across to the other side in canoes.

WATER SUPPLY.

The piped supply at Lokoja and the partial one at Zaria have already been mentioned, as has also the proposed one at the new capital.

The piped supplies adumbrated at Kano and at Minna are really practical projects which are receiving serious consideration.

There is a very general tendency towards disestablishing iron tanks; with a view, of course, to removing the roof-gutters as well.

Towards the end of the year, in some places, the problem of how to secure good water was lost in the greater problem of how to secure any water.

Generally speaking, the sources of the water supply are as previously reported.

Constant attention is paid to it, whatever its source; and, at Government stations, persons doing anything to contaminate it are severely dealt with on conviction.

There are very few stations at which Europeans cannot obtain condensed water; and that supplied to gaols and native hospitals is boiled.

Some wise Europeans treat it as an offence when a servant contracts Dysentery or Guinea Worm, just as they safeguard their own health by administering regular prophylactic doses of quinine to the native inhabitants of their compounds.

DRAINAGE.

There is no system of piped or underground drainage, and the surface drainage is as formerly described: i.e., percolation, natural water-courses, and auxiliary artificial cuttings where necessary.

Pains are taken at all stations to keep the water-courses as clear as possible of vegetation, and, where it is possible and desirable, endeavours are made to line them with blocks of stone.

CLEARANCE OF BUSH, UNDERGROWTH, ETC.

Burning off, in the dry season, is the commonest form of clearing practised.

Small grants are given to stations, where there are no prisoners, for clearing operations during the rains.

At stations where there are prisoners, the clearing is generally done by them; but there are stations—Lokoja for example—where prison has to be supplemented by paid labour.

Where long grass cannot be burnt off in the dry weather, it is grubbed up.

Dhub grass is being laid down more and more.

The experiment with short Natal grass, made by the Director of Agriculture during the year, practically failed for lack of sufficient rain.

Particularly extensive clearing is done wherever there is Tsetse fly.

The planting of short crops around native towns continues to receive every encouragement.

(B.) MEASURES TAKEN TO SPREAD KNOWLEDGE OF HYGIENE AND SANITATION.

LECTURES.

Courses of lectures are not given; the ground is not suitable for long discourses. Practical teaching is what is required, every point is illustrated by simple familiar examples.

The conference which the Sanitary Officers in association with Political Officers hold with leading natives, and which have been described repeatedly, are the best form of public teaching.

Unfortunately, it was not possible for the Sanitary Officers to do much in this way during the year, the railway having demanded so much of their attention. This had to be so; as it was practically another state added to the country.

But some of the Medical Officers did excellent work in this direction, each in his own district.

It is hoped that, eventually, representative natives will accompany Sanitary Officers on their tours and return, each to his own centre, after a course of some two months' daily practical teaching in different towns. This method has already been tried, and the experience has shewn the wisdom of repeating it at every possible opportunity.

SCHOOL TEACHING.

Elementary Hygiene continues to be taught at Nassarawa, where there is a fine field with good material to work on.

During the year, medical activity in the way of taking part in this teaching was rather less than before; on account of the routine medical work of the station having suddenly become much heavier and more exacting.

The salutary effect of life at Nassarawa Schools and the good results which may reasonably be expected therefrom were described in the last Report.

Just as the Railway stunted the teaching opportunities of the Sanitary Officers, it was also largely responsible for robbing the Schools of part of their medical teacher's services: but it may be that the opening of minds effected by the railway and its activities may prove an equivalent advantage.

(C.) RECOMMENDATIONS FOR FUTURE WORK.

It is superfluous to table recommendations for future work; for the simple reason that the work already marked out will, if it be completed within 1914, monopolise every day of the year.

The work now in hand includes the completing—in association with the Director of Surveys and his Officers—the lay-out of the locations at all the railway stations; the lay-out of several townships on the Bauchi Plateau; the selection for sanction and the eventual lay-out of a headquarter station for the Mining Region and Central Province; the lay-out of the Political Station at Bida; the lay-out of the new Lokoja native town across the Mimi; the tour of the river Benue for the purpose of laying-out every town on its banks, to have everything arranged at them so far as present requirements and the method of future expansion are concerned.

Tours of inspection in Borgu, Bauchi, Muri, Katsina, Hadeija and the Northern emirates generally are overdue; while there is not a Province some part of which does not stand in need of being taken in hand.

In addition to this, towns, such as Kano, Zaria, Baro, and particularly the site of the new capital, will call for repeated visits; while new towns are continually springing up, which need laying out with plans for submission to His Excellency before they can finally go on.

(Signed) M. CAMERON BLAIR,

Senior Sanitary Officer.

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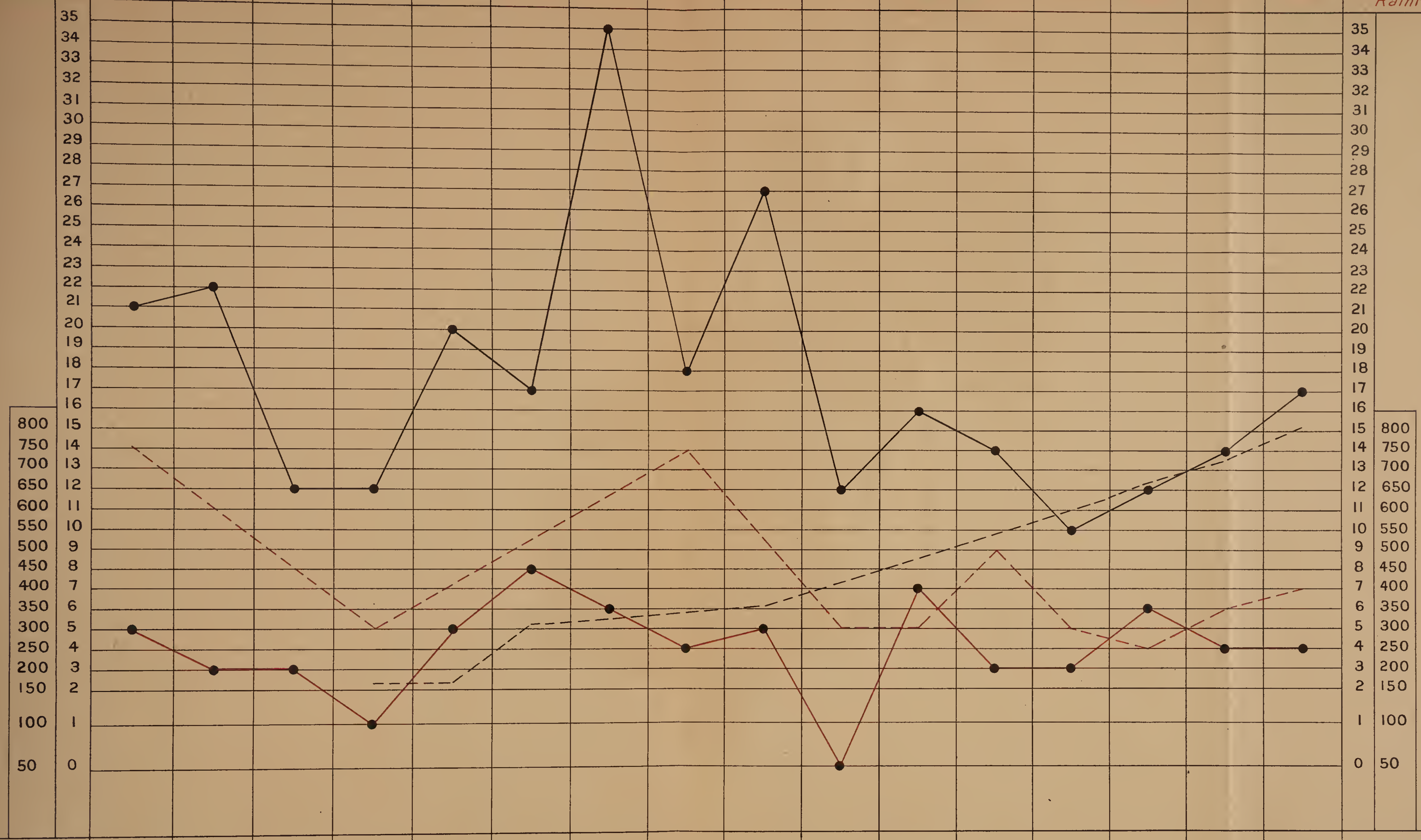
1914.

BLACKWATER AND MALARIAL FEVERS.

CHART A

YEARLY INCIDENCE OF CASES AND DEATHS 1898-1913.

YEAR	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	YEAR
Average Annual Rainfall.						46·59"	39·91"	43·81"	46·56"	31·52"	41·46"	46·06"	38·65"	37·56"	32·90"	32·38"	*Average Annual Rainfall.*



Total Cases } *Blackwater Fever*	21	22	12	12	20	17	35	18	27	12	16	14	10	12	14	17	279
Total Deaths	5	3	3	1	5	8	6	4	5	0	7	3	3	6	4	4	67
%Mortality	23·8	13·6	25·00	8·30	25·00	47·05	17·10	22·20	18·50	0	43·70	21·60	33·00	50·00	28·57	23·53	25·06

TOTALS

1. Black Line, total cases of Blackwater Fever in one case per line

2. Red Line, fatal cases " " " "

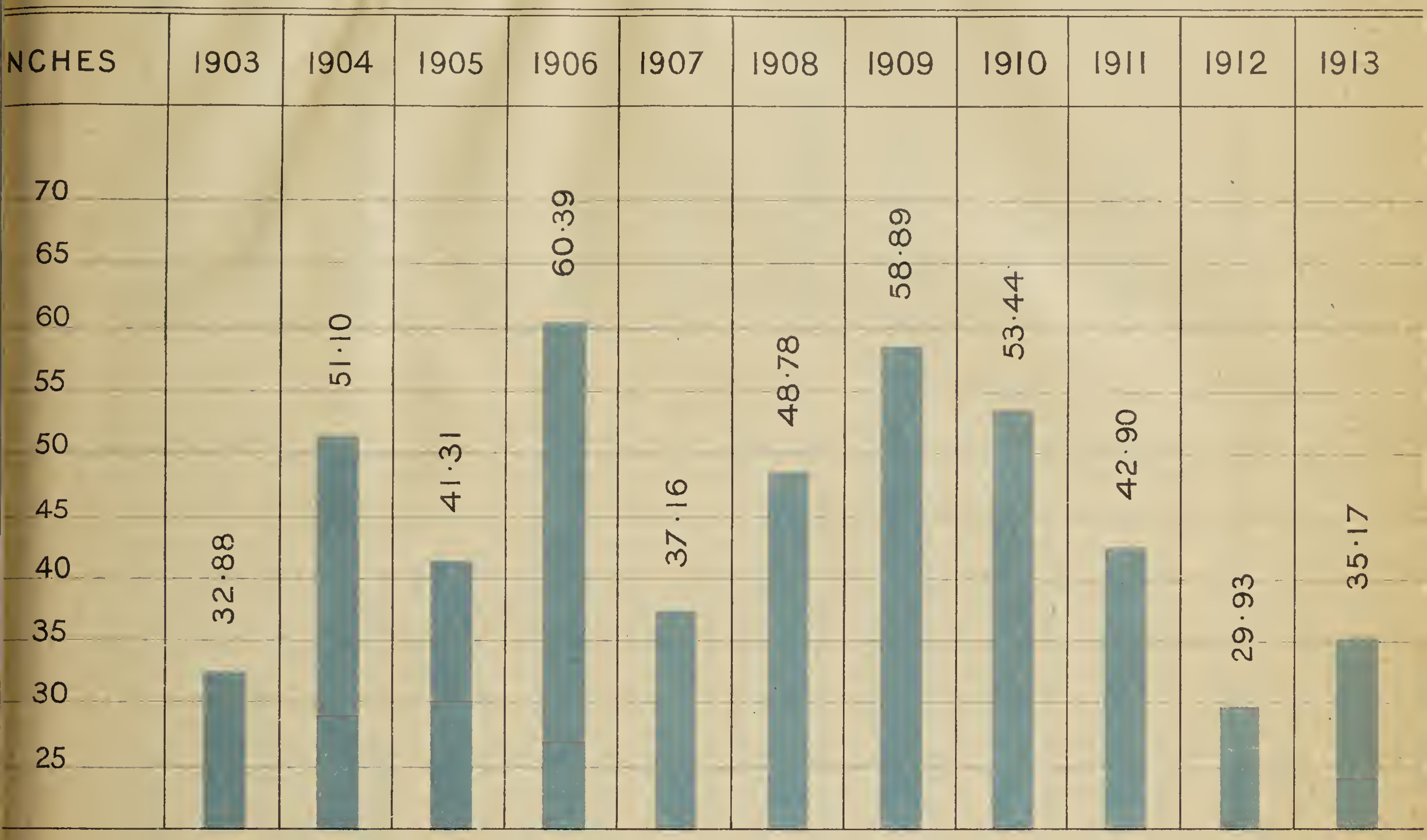
3. Dotted Black Line, Average European Population in 50 per line.

4. Dotted Red Line, European cases of Malaria 50 per line.

CHARTS SHOWING RAINFALL

CHART "B"

ZUNGERU



LOKOJA

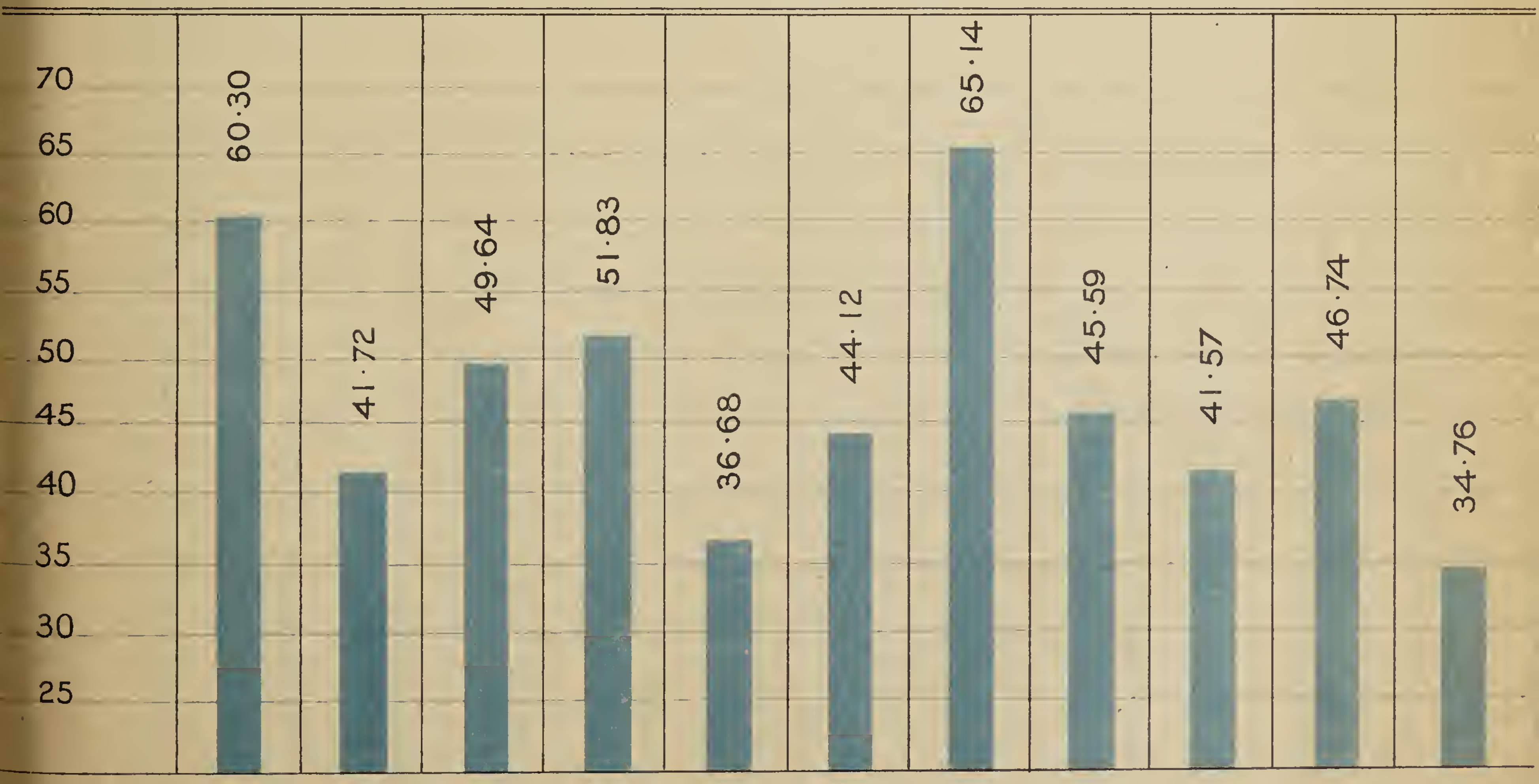
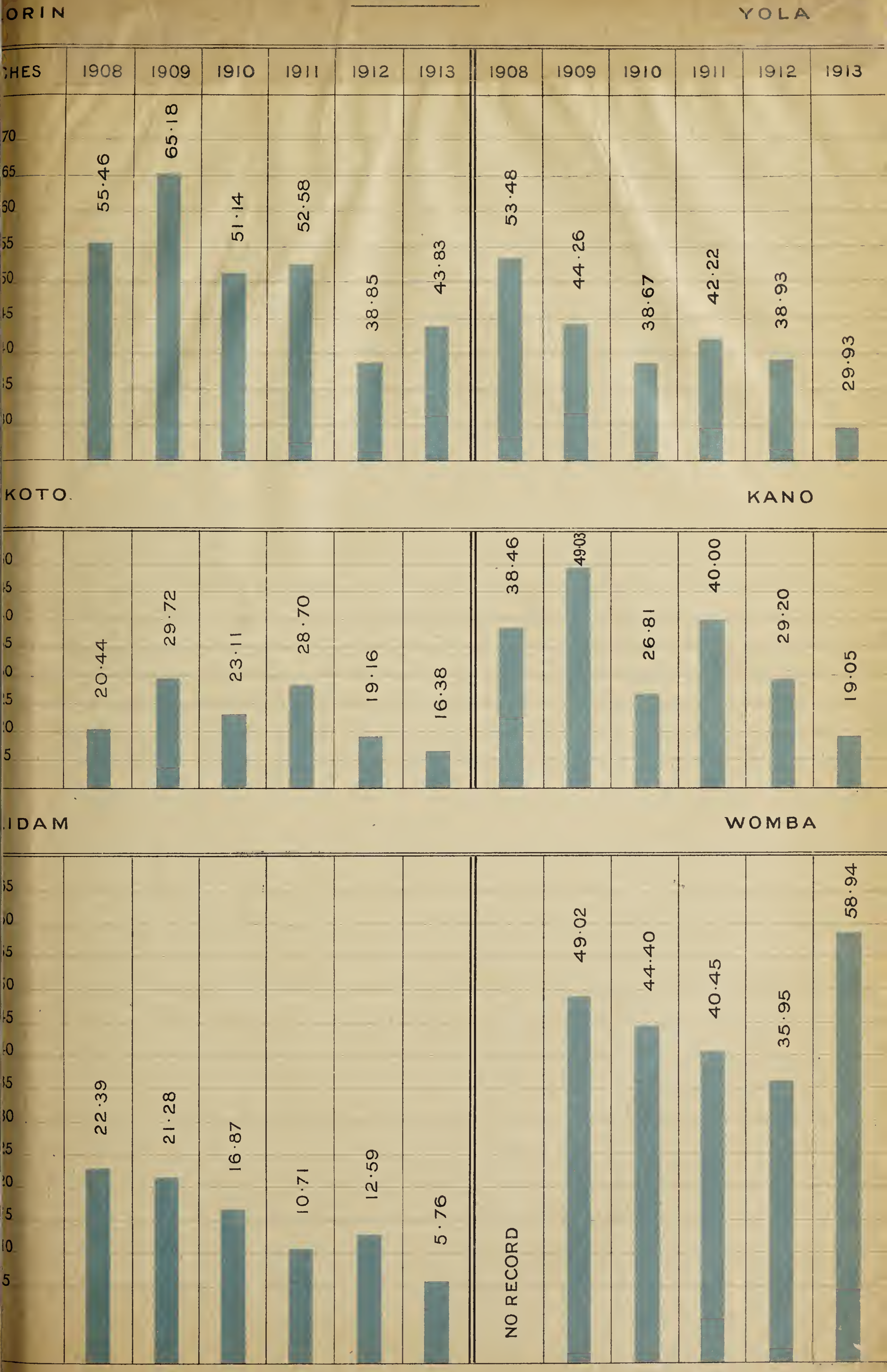


CHART "C"


ORIN
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38·67
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KOTO.
KANO
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16·38
38·46
49·03
26·81
40·00
29·20
19·05
IDAM
WOMBA
22·39
21·28
16·87
10·71
12·59
5·76
NO RECORD
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44·40
40·45
35·95
58·94